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THE ALPHABET

AN ACCOUNT OF THE

Origin and Development of Letters

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Origin and Development of Letters

By ISAAC TAYLOR, M.A., LL.D.

IN TWO VOLUMES

VOL. II.

Aryan Alphabets

LONDON
KEGAN PAUL, TRENCH, & CO., 1, PATERNOSTER SQUARE
1883

LONDON:
PRINTED BY GILBERT & RIVINGTON (LIMITED),
ST. JOHN'S SQUARE, CLERKENWELL ROAD.

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CHAPTER VII.

THE GREEK ALPHABET.

§ 1. *The Science of Greek Epigraphy.* § 2. *Abu Simbel.* § 3. *The Legend of Cadmus.* § 4. *The Cadmean Alphabet.* § 5. *The Dated Monuments.* § 6. *Classification of Greek Alphabets.* § 7. *The Abecedaria.* § 8. *The Letters.* § 9. *The Asianic Scripts.*

§ 1. THE SCIENCE OF GREEK EPIGRAPHY.

UPWARDS of ten thousand ancient Greek inscriptions are included in the four volumes of the *Corpus Inscriptionum Græcarum.* It has been estimated, however, that this is not more than half the number which a complete collection would comprise. How much, or rather how little, was known sixty years ago about this vast mass of epigraphic material, may be gathered from the scholarly work of Hugh James Rose, *Inscriptiones Græcæ Vetustissimæ,* published in 1825, which contains notices of less than one hundred inscriptions. Now, however, by the labours of the great school of German epigraphists, among whom the most illustrious names are those of Böckh, Franz, Mommsen, and Kirchhoff, our knowledge has been

greatly extended, chaotic confusion has been replaced by orderly arrangement, and the history of the Greek alphabet has been placed upon an unassailable scientific basis.[1] In England the new science of Greek epigraphy, which may be said to deal with the chronological and geographical classification of Greek inscriptions, has found few followers, and there is only too much truth in the complaint urged by Professor Mahaffy that even eminent English Hellenists are

[1] The publication of the *Corpus Inscriptionum Græcarum* may be said to have made possible the science of Greek Epigraphy. The two first volumes, edited by the illustrious scholar, Böckh, appeared in 1828 and 1833. Without detracting from the extraordinary merit of Böckh's labours, it may be acknowledged that the time has come when a revised edition of these two volumes might be published with advantage. Böckh was followed by Franz, who discussed the fundamental principles of epigraphic science in his *Elementa epigraphices Græcæ*, published in 1840, and brought out the 3rd volume of the *Corpus* in 1853. The important work of Mommsen, *Die unteritalischen Dialekten*, appeared in 1850. The 4th volume of the *Corpus* was published in 1856 by Kirchhoff, to whom we also owe a compendious and most valuable systematic manual of Greek epigraphy, the *Studien zur Geschichte des griechischen Alphabets*, an essay originally published in the Transactions of the Berlin Academy for 1863, which has gone through three editions in its separate form. The *Études sur l'origine et formation de l'alphabet grec* of Lenormant appeared in the *Revue Archéologique* for 1867 and 1868. The substance of these essays will be found in the article entitled *Alphabetum*, published in 1873 in Daremberg and Saglio's *Dictionnaire des Antiquités Grecques et Romaines*, which still remains the most lucid elementary treatise on the subject. The works of Rangabé (*Antiquités Helléniques*), Ross, Le Bas, Waddington, Kumanudes, and Hicks, will also be found essential by the student.

found to be helpless in face of a Greek inscription.[1] The fundamental principles of the science are however so simple, and the essential facts on which it rests are so few, that without going into an overwhelming mass of detail, it may perhaps prove possible to give within the compass of a single chapter a clear and useful summary of the results which have been obtained by the great German scholars who have been named.

From the character of the alphabet employed, the science of Greek epigraphy professes to be able to determine approximately the date and the place of origin of inscriptions. Starting with the assumption that the Greek alphabet underwent a process of orderly evolution, which lasted continuously for several centuries, a series of cautious deductions and brilliant generalizations have been drawn from a very limited number of fundamental facts.

The general nature of these facts and conclusions

[1] Mahaffy, *History of Greek Literature*, vol. ii., p. 2. Professor Mahaffy's book has elicited a striking illustration of the truth of his remark. Mr. Paley making acquaintance in it, for the first time, with the cardinal monument of Greek epigraphy, the inscription at Abu Simbel (see p. 11. *infra*), finds he cannot reconcile it with his Homeric theories, or his conjectures as to the date at which written literature commenced among the Greeks. So much the worse for the inscription. He pronounces "the whole thing a hoax." "I have no hesitation," he says, "in expressing my belief that it is not really earlier than the age of Pericles." (Paley, *Bibliographia Græca*, p. 32.) If Mr. Paley had been acquainted with the elements of epigraphic science he would doubtless have felt some 'hesitation' before setting aside the unanimous verdict of European epigraphists.

can be indicated in a single paragraph. Up to the end of the fifth century we find that almost every Hellenic State possessed its own local alphabet. *After this time a nearly uniform alphabet* prevailed throughout Greece, which underwent only inconsiderable modifications. Now we know that in the year 403 B.C., after the close of the Peloponnesian war, the Ionian alphabet was formally adopted for public purposes at Athens by a decree of the people, and within a few years the example of Athens was followed throughout the greater part of Greece. An inscription from Halicarnassus, containing internal evidence by which its date is fixed, establishes the fact that in Asia Minor this Ionian alphabet had approximately attained its final form as early as the 80th Olympiad (460 B.C.). For the history of its formation out of the Phœnician alphabet—a process which must have occupied many centuries—and for the history of the local alphabets which it displaced, the definite materials consist of the inscriptions which happen to contain a date. Naturally these are few. It would be possible to reckon on the fingers the inscriptions earlier than the 80th Olympiad to which a positive date can be assigned. The rest of the science of Greek epigraphy has been built up of ingenious but fairly certain deductions based on these somewhat narrow foundations. These facts and conclusions have now to be examined.

§ 2. ABU SIMBEL.

The first absolutely firm standing ground in the history of the Greek alphabet, and consequently in the history of our own, is furnished by a monument which appertains, not to Hellas, or to any of the numerous seats of Hellenic culture, but to the Nubian desert, a region so remote as to be almost beyond the confines of ancient civilization.

At Abu Simbel, or as it used to be more correctly called, at Ipsambul,[1] near the second cataract of the Nile, the most imposing of all the monuments of the ancient magnificence of Egypt still attracts, as it has done for five-and-twenty centuries, the wondering admiration of a host of visitors.

At this spot the alluvial plain, which elsewhere fringes the river, has disappeared; the bare cliffs and the desert have closed in on either side. The boundaries of Egypt have been left behind, and the traveller seems to be passing through the rocky gates which lead to the unknown regions of central Africa. At that vastly remote period, when the Hebrews were still toiling in Egyptian bondage, Rameses II., the most magnificent

[1] Abu Simbel, the 'Father of the Sickle,' which is the modern local name, is a recent Arabic *Volks-etymologie*, formed by the corruption of Ipsambul, itself a corruption of Psam-polis, the 'city of Psam,' the name bestowed by Greek travellers at a very early period.

of all the Pharaohs, carved this great precipice of rock into a stupendous temple-cave dedicated to the great gods of the land of Egypt, and committed to its walls the annals of his reign and the records of his distant conquests; trusting, and not in vain, that the desolate solitudes of Nubia would guard more faithfully the memories of his glory than the palaces and temples which he reared in the precincts of his great cities of Thebes, Memphis, or Abydos.

In front of the portals of this temple are seated four colossal portrait statues of the king, all hewn out of the solid sandstone of the cliff. The scale of these figures is astounding,[1] but the impression which they make upon the imagination of the traveller is probably due not so much to the gigantic size, or to the desolation of the surrounding desert, as to their air of everlasting and serene repose. No grander conception has ever been formed by man than to hollow the walls of this vast cliff into a memorial temple, its portals guarded by the eternal majesty of these stupendous figures.

Travellers have exhausted the vocabulary of panegyric in endeavouring to describe the overwhelming impression made upon the mind by this marvellous

[1] If erect, their stature would be nearly 90 feet. The exact dimensions are as follows:—height, 66 feet; breadth across the shoulders, 25⅓ feet; from elbow to tip of fingers, 15 feet; nose, 3½ feet; leg from knee to heel, 20 feet; forefinger, 3 feet; height of façade, about 100 feet.

façade;—these four great masterpieces of Egyptian sculpture standing in their unapproachable magnificence

in a spot so remote from the dwellings of mankind. "It surpasses everything which imagination can conceive of grandeur in a human work." It seems "hewn as if by enchantment—for this is the proper word—so bold,

so powerful, so exceeding all human measure, as if giants had turned the bare rocks into a living work of art." "The first view ranks with Niagara, Naples, and Mont Blanc, as a sight never to be forgotten."

Such are the words in which travellers have attempted to describe the wonders of Abu Simbel.[1]

The temple of which these marvellous statues form the portal is itself of almost matchless interest. It enshrines a complete contemporary chronicle of the proudest period of Egyptian history. The richly painted and sculptured walls are crowded with the records of the stirring reign of Rameses—we have the account of the countless wars which he waged, the battles which he fought, the cities which he captured, the embassies which he received, the tributes from distant nations which were laid at his feet—we have priceless ethnographic portraitures of the races of almost every land, from the Hittites living on the banks of the Orontes, to unknown tribes inhabiting the shores of the Indian ocean.

But the interest of Abu Simbel does not end here. The colossal statues are covered with memorials,[2]

[1] The best descriptions will be found in Brugsch, *History of Egypt*, vol. ii. pp. 90, 91; Lepsius, *Briefe aus Aegypten*, pp. 260, 261; Villiers Stuart, *Nile Gleanings*, p. 168; Edwards, *A Thousand Miles up the Nile*, p. 424; Duncker, *History of Antiquity*, vol. i. p. 175.

[2] The inscriptions were originally transcribed by Bankes and Salt, and first published by Leake in *Trans. Royal Soc. Lit.* for 1827. See Lepsius, *Denkmäler aus Ægypten*, vol. xii., plates 98, 99, Nos. 515 to 536; Böckh, *Corpus*, vol. iii. p. 507, No. 5126; Kirchhoff, *Studien*.

written in many alphabets, by countless travellers of all ages who have visited this spot. Most of these inscriptions are brief, containing little more than the bare names of visitors. But among all the confusion of these scribbled records there are several of priceless value for the student of Palæography. Among the more ancient inscriptions six are Phœnician, nineteen are Greek, and three are in an unknown alphabet which is supposed to be Carian. The most important is a Greek inscription consisting of five lines of writing, which serves to fix approximately the date at which it was written. It records the visit of certain Greeks who were in the service of Psammetichus, an Egyptian king belonging to the twenty-sixth dynasty, and it must therefore date from the 7th century B.C., or from the beginning of the 6th. Of the shorter Greek inscriptions, eight appear from internal evidence to have been written at the same time and probably on the same day. The other ten records, though ancient, are shown by the character of the writing to belong to later periods.

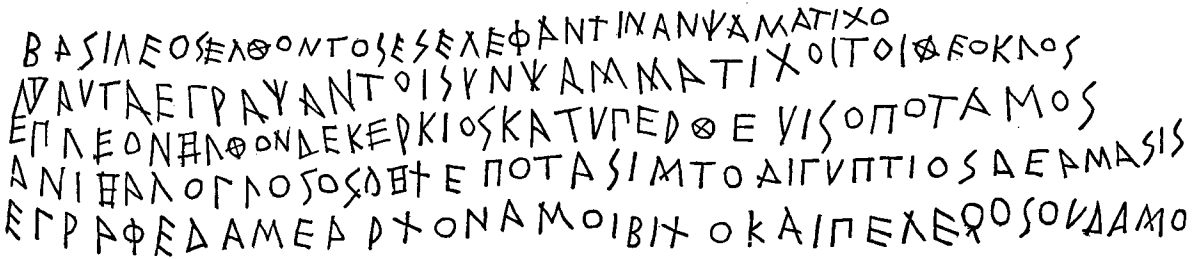
We have therefore at Abu Simbel nine records, which may claim to be the earliest Greek inscriptions

pp. 34 to 42; Blass, in *Hermes*, vol. xiii. p. 381; Wiedemann, in *Rheinisches Museum*, 1880, p. 364; Blau, in *Z. D. M. G.*, vol. xix. p. 522; Judas, *Étude Demonstrative;* Sayce, in *Transactions of Royal Society of Literature* for 1873; Levy, *Phönizische Studien*, heft iii. p. 80; Rawlinson, *Herodotus*, ii. p. 37; Mahaffy, *Greek Literature*, ii. p. 2; Duncker, *Hist. Antiq.*, vol. iii., pp. 307, 399; Hicks, *Manual of Greek Historical Inscriptions*, p. 4.

in existence to which any positive date can be assigned. They were cut when what we call Greek history can hardly be said to have commenced—two hundred years before Herodotus, the Father of History, had composed his work, a century before Athens began to rise to power. More ancient even than the epoch assigned to Solon, Thales, and the 'seven wise men of Greece,' they must be placed in the half legendary period at which the laws of Dracon are said to have been enacted. At this time, which to us seems so remote, the Ionian and Carian mercenaries must have gazed at the façade of Rameses as a monument of immense antiquity, belonging to a period of Egyptian history which long since had passed away. For eight centuries those colossal figures had been sitting silent in the Nubian desert; the glories of the Theban empire had vanished altogether, while in all probability the exploits of Rameses himself had already become blended with those of Thothmes and Sethos into the legend of the imaginary hero Sesostris.

The unrivalled importance of the chief Abu Simbel inscription for the history of Greek palæography, and the costly inaccessibility of the huge folios in which it is engraved, make it desirable here to reproduce, on a smaller scale, but with all possible accuracy, the facsimile which Lepsius has given.[1] The great letters, which are about two inches in height, were so

[1] Lepsius, *Denkmäler aus Ægypten*, plate 99.



THE ABU SIMBEL RECORD.

βασιλεος ελθοντος ες Ελεφαντιναν Ψαματιχο
ταυτα εγραψαν τοι συν Ψαμματιχοι τοι Θεοκλ[ε]ος.
επλεον, ηλθον δε Κερκιος κατυπερθε υις ο ποταμος
ανιη. αλογλοσος δ'ηχε Ποτασιμτο, Αιγυπτιος δε Αμασις
εγραφε δ'αμε Αρχον Αμοιβιχο, και Πελεqος οΥδαμο.

"When King Psamatichos came to Elephantina, those who were with Psammatichos the son of Theokles, wrote this. They sailed and came above Kerkis as far as the river permitted. Potasimto led the foreigners, and Amasis the Egyptians. The writer was Archon the son of Amoibichos, and Peleqos son of Eudamos."

deeply chiselled, and in the dry Nubian air have suffered so little from atmospheric influences, that there is hardly a doubt as to the actual reading of the inscription.[1]

It would appear that when King Psammetichus was at Elephantine, some of his Greek and Carian mercenaries, headed by a Greek captain, who, according to a common practice, had been named after the king, undertook an exploration into Nubia, sailing on to Kerkis, where they found navigation stopped by the second or Great Cataract. On their return they halted at Abu Simbel, and left there this record of their journey. Two of the Greeks seem to have shared the work of engraving the great inscription, while eight Greeks, three Carians, and several of the Phœnicians separately scratched their names elsewhere on the knees of the colossus.

Some of the shorter inscriptions furnish information as to the nationality of the writers. One of them designates himself as "Pabis the Kolophonian, who came with Psammatichos." Another was "Elesibios the Teian;" a third states, "Telephos the Ialysian wrote me." The names, separately recorded, of "Python, son of Amoibichos," "Hermokrithis," "Hagesermos," and "Pasidon, son of Ippos," serve to prove how

[1] I have given the new version of Blass and Wiedemann, which is not however free from difficulty. Potasimpto seems to be an Egyptian name, the first portion, which we have in Potiphar, meaning 'belonging to,' 'priest of,' and *simpto* being equivalent to *Sem-taui*, a title of Horus. Possibly we should read Δηχεπότας Ἴμπτου.

widely diffused at this early period was the art of writing among the Ionian Greeks.

The longer record enables us to determine the date of the inscriptions within limits which are comparatively narrow. There were three Egyptian kings called Psamatik, all of whom belonged to the 26th or Saïtic dynasty. Psammetichus III., who reigned only for a few months, is out of the question. Both the others visited Elephantine, where they have left their records on the rocks. Scholars have, for the most part, been inclined to assign the visit of the Ionian mercenaries to the reign of Psammetichus I., which would bring it between 654 and 617 B.C., when he was succeeded by his son Necho, the Pharaoh by whom Josiah, King of Judah, was slain, in the battle of Megiddo. If Psammetichus II. be the king intended—and it must be acknowledged that arguments of great weight can be produced in favour of this view—the date would be between 594 and 589 B.C. In such a matter, however, a few years more or less are of no great importance. In any case the inscription represents the Ionian alphabet towards the close of the 7th century B.C.

The interest and importance of this record can hardly be exaggerated. To the historian it is of interest as a confirmation of the account given by Herodotus[1] of the employment of Ionian and Carian mercenaries in Egypt; by the geographer it is prized

[1] Cf. Herodotus, ii., § 30; ii., § 152.

as the earliest contemporary record of geographical exploration; for the philologist it conserves in an unimpeachable form a most primitive specimen of Ionic Greek; while for the student of Greek palæography it is of inestimable value as the cardinal example of Greek writing of the 7th century B.C., and also, being the first Greek inscription to which a definite date can be assigned, as affording an unassailable standing ground for constructing the history of the early alphabet of Greece.

But the chief importance of the Abu Simbel records lies in the evidence which they incidentally supply as to the date at which the Greeks must have come into possession of the art of alphabetic writing. We have nine Greek inscriptions, three Carian, and six Phœnician, all presumably contemporary.[1] In these nine Greek inscriptions the alphabet employed is practically uniform, the variations in the forms of individual letters are trivial, while the precision and regularity of the writing, the correctness of the spelling, and the evidence of familiar habitude with the use of graphic materials, show that in the 7th century B.C. alphabetic writing could have been no novelty among the Greeks who were accustomed to take service as mercenaries with foreign princes.

[1] The Carian inscriptions have not yet been read. The Phœnician records are very difficult to decipher, but they seem to contain the name of Hamsabatichi (Psammetichus) and of mercenaries named Pethar ben Jethar and Sillon ben Pethiach.

That so large a proportion of these soldiers of fortune knew how to write, and that adventurers from different states, Dorians from Ialysos in Rhodes, and Ionians from Teos and Kolophon on the mainland, were able to inscribe their names in well formed and legible letters, proves that such a generally diffused knowledge of alphabetic writing could not have been introduced at any very recent date. How considerable a period would be required for the formation of this definite and uniform Greek alphabet will be seen more plainly by comparing it with the alphabets employed in the contemporary records of the Carian and Phœnician comrades of the Greek mercenaries. The Carian and Ionian alphabets, which must have been developed from a common source, are so different that it is doubtful whether a person acquainted with the one would have been able to decipher the other. This great difference in the alphabets of two adjacent peoples establishes the very remote antiquity of alphabetic writing in the Ægean. It will, however, suffice to institute a comparison between the alphabets used in the Greek and the Phœnician records.

In the Greek inscriptions the direction of the writing has already been changed; it no longer runs from right to left, but has definitely assumed the modern direction from left to right. The phonetic changes are still more significant. The four guttural breaths, *aleph*, *he*, *cheth*, and *'ayin*, and the two semi-consonants, *vau* and *yod*, have been transformed into the six vowels α, ε, η, ο, υ, ι,

only one of them, *eta* (*cheth*), retaining traces of the earlier phonesis by its permissive use as an aspirate. Three new letters, φ, χ, ψ, all of them unknown in any Semitic alphabet, have been introduced, while important morphological changes have taken place in nearly half of the letters of the alphabet.[1]

Thus widely had the Greek and Phœnician alphabets diverged from each other since the Greeks had acquired the art of writing. All the really important characteristics, phonological or morphological, which now distinguish the alphabets of Europe from those of Asia, had already, before the close of the 7th century B.C., had time to make their appearance.

Knowing the extreme slowness of the processes of alphabetic evolution, every student of epigraphy will admit that such a radical transformation of the Phœnician alphabet could only have been effected in the course of centuries. Not to speak of the time required for the change in the direction of the writing, or for the evolution of the vowels, the mere modifications in the forms of the letters must have taken many successive generations to bring about. We know, from the case of other alphabets, that the forms of letters change with extreme slowness, the modifications introduced during any single generation being almost imperceptible.

[1] Compare the forms of the Greek letters α, β, δ, ι, λ, μ, ν, π, σ, τ, in the facsimile on p. 11, with the Abu Simbel forms of their Phœnician prototypes given in column iv. of the Table in vol. i., p. 227.

In order to arrive at some rude measure of the time that would be needed to bring about such considerable results we may compare the alphabet of Abu Simbel with the next succeeding monuments of Greek epigraphy which bear a definite date. These are the inscriptions on the pedestals of certain statues which lined the sacred way leading to the temple of Apollo at Branchidæ near Miletus, which on valid grounds are assigned to the 60th Olympiad.[1]

Although these inscriptions are later by nearly a hundred years than those at Abu Simbel, yet the forms of the letters are almost identical. One new letter, *omega*, makes its appearance; *koppa*, which at Abu Simbel is already obolescent, has now finally disappeared; while *eta*, which at Abu Simbel may denote either a vowel or the aspirate, is now specialized, and is used exclusively as a vowel. Since it took nearly a century to bring about these three innovations, it is obvious that a century would be wholly inadequate for effecting the enormously greater amount of divergence between the Abu Simbel alphabet and the parent Phœnician. Instead of one additional letter, there are three, ϕ, χ, ψ; instead of one or two trifling variations of form, material changes have affected nearly half the letters of the alphabet, not to speak of the evolution of the vowels, a process which has already been completed in five cases, and partially in a sixth.

[1] Kirchhoff, *Studien*, pp. 25, 26. See the facsimile on p. 46, and cols. v. vi. and vii. of the Table on page 59.

The formation of this Abu Simbel alphabet, it may confidently be concluded, must have been a prolonged process; and the two or three centuries which have sometimes been thought to be sufficient may fairly be extended, on a reasonable computation, to four or even five.

§ 3. THE LEGEND OF CADMUS.

The inscriptions at Abu Simbel afford a fixed starting point from which the inquiry into the early history of the Greek alphabet may be conducted. They prove that at the close of the 7th century B.C. the Ionian Greeks were in possession of a well-developed alphabet of considerable antiquity, which agreed in all essential respects with the Greek alphabet in its final form. As regards the direction of the writing, the forms, powers, and number of the letters, the Abu Simbel records exhibit all the characteristic features which distinguish the Greek from the Phœnician alphabet.

The formation of this seventh century Greek alphabet, which must have required such a lengthened period to effect, has now to be investigated. The mode in which this inquiry can be prosecuted is twofold. It will be necessary to examine, in the first place, the evidence afforded by Greek tradition, and the results yielded by the modern methods of historic inference; and, in the second place, the resources of the new science of

Greek epigraphy must be employed to determine the earliest form of the Greek alphabet, by arranging in chronological sequence the long series of monuments which, though undated, manifestly belong to its earlier stages.

That the primitive Greek alphabet was obtained by direct transmission from the Phœnicians is indicated by such a unanimous tradition of classical writers that it must be regarded as more than a mere legend. This general belief is implied by the very name borne by the ancient Greek letters, *φοινικήια γράμματα*. These "Phœnician letters" were also called the "Cadmean letters," having been introduced, according to a Greek legend, which is repeatedly quoted by Herodotus, by Cadmus the Tyrian when he sailed for Greece in search of Europa.[1] It is plain that Cadmus and Europa are merely eponymic names, Cadmus meaning in Semitic speech[2] "the man of the East," while Europa is the damsel who personifies "the West." The Phœnician mariners who brought merchandise to the shores of Greece were the "men of the East," just as the Danes of Dublin were the "Ostmen," and to the English of the 14th century the Lübeck merchants were the "Easterlings," who have

[1] Europe, as a geographical term, not improbably designated at first merely the plain of Thebes, just as the word 'Asia' originally denoted only the plain of Ephesus, and 'Africa' the plain of Carthage.

[2] Thus the Hebrews knew the Arab tribes of the trans-Jordanic deserts as the Beni Kedem, the "sons of the East." See Job i. 3.

left in our language an abiding memorial of their trade in the "sterling" or "easterling" currency which still remains our monetary standard. The name of Europa tells its tale no less plainly, being adapted from the Semitic word *ereb*, the "darkness," the "evening," and hence the "West."[1] The tradition of the search by Cadmus for Europa must therefore be regarded as an eponymic myth referring to the exploration of western lands by the eastern navigators.

This tradition of the Greeks, that their alphabet was obtained from the Phœnicians, derives strong confirmation, as has been already shown,[2] from the essential identity of the early Greek and Phœnician alphabets as regards the names, the order, and the forms of the letters. It is therefore in those parts of Greece which were occupied by Phœnician colonies that we must search for vestiges of the earliest forms of the Greek alphabet.

Herodotus informs us that Cadmus, having undertaken the search for Europa, landed first on the island of Thera, which was then probably inhabited by Carians, a people of non-Aryan race. On Thera, we are told, he left a colony of Phœnicians, who lived on the island for eight generations, until the arrival of the

[1] We have this word in Erebus, the darkness of the west. The modern Arabic form of the word is *gharb*, familiar to us in the name of the Portuguese province of Algarve, which is simply the Moorish designation *al-gharb*, "the West."

[2] See vol. i., p. 74.

Dorians.[1] The rest of the companions of Cadmus sailed on to Thasos, and thence to Bœotia, where they taught the inhabitants the art of writing, of which, adds Herodotus, "as it seems to me, the Hellenes had heretofore been ignorant."[2] This account, though evidently not historical, is so far corroborated by independent evidence that it may be regarded as a genuine tradition of the gradual progress of Phœnician colonization in the Ægean.

The island of Thera, as we shall presently see, has furnished the most ancient of all the existing monuments of Greek epigraphy, while with regard to Thasos we have not only ceramic inscriptions of great antiquity;[3] but we learn from Herodotus that he had seen with his own eyes the traces of the gigantic mining excavations undertaken by the Phœnicians in their search for gold. The worship in Samothrace of the Cabiri, the great deities, whose name must be referred to the Semitic word *kabir*, 'great,' must be regarded as evidence of Phœnician settlement.

The Greek tradition affirmed that it was from the Phœnician colony in Bœotia that the alphabet was obtained. The existence of an early settlement of the Phœnicians at Thebes is borne out, not only by the

[1] That the neighbouring island of Melos was also occupied by a very ancient Phœnician colony we learn from Thucydides, v. 81.

[2] For the legend of Cadmus, see Herodotus, ii. 44, 49; iv. 147; v. 57 to 59.

[3] See Dumont, *Inscriptions Céramiques de Grèce.* Paris, 1872.

worship of the Cabiri, but by the historical name of the Cadmeia,[1] which was applied to the Theban acropolis, and by the survival in the Theban dialect of Semitic words, such as ἐλιεὺς, 'god.'

At Corinth there was a very ancient and important Phœnician settlement. This is proved by the worship of the Tyrian deity Melcarth under the Hellenized name of Melicertes, who was affirmed to be the son of Ino, daughter of Cadmus. The legend of Cadmus, as recorded by Herodotus, must therefore be admitted to have a basis of historic fact.

The date of these Phœnician settlements in Hellas is referred by Greek tradition to a period anterior to the Trojan war, that is to a time earlier than the *12th century* B.C.

This traditional date is not unsupported by other considerations. There can be no doubt that the 13th century B.C. witnessed a sudden extension of maritime enterprise among the Phœnicians, as to the causes of which a reasonable conjecture may be offered. The great Hittite empire, already weakened by the wars of Rameses, seems to have been pressed upon by the Amorites, who in turn were driven forward by the Hebrew conquest, many of the fugitives doubtless taking refuge in the coast cities of Phœnicia. To

[1] This is evidently a name of the same class as the name of Oxmantown (vicus Ostmannorum), the entrenched quarter of Dublin, which still bears witness to the ancient Danish or Norwegian colony

carry off the surplus population, and to obtain the raw materials for their manufactures, the Phœnicians established trading posts and colonies in Cyprus, Rhodes, and Crete, which were presently extended to Thera and Melos, afterwards to Samothrace, Imbros, Lemnos, and Thasos, and lastly to Chalcis, Thebes and Corinth. They got copper from Cyprus, and gold from Thasos, and they obtained their dye for the Tyrian purple chiefly from the coasts of Hellas, and more especially from the straits of Eubœa, where the shell-fish which yielded it was found in the greatest abundance.

This great extension of commercial enterprise among the Phœnicians can hardly be placed later than the year 1200 B.C. In all probability it was in the 13th century that they settled in Cyprus and Rhodes, and in the 12th that they advanced to the Isles and Hellas. Hence about this time the Phœnician alphabet must have become known to the Carian and Hellenic races who inhabited the islands of the Ægean. This cannot have occurred at any much later date, since the Phœnician predominance in this region did not last for more than two hundred years. In the 10th century the Phœnician trade extended from the Atlantic to the Indian Ocean, but their mines and colonies in the Ægean had been lost by the advance of Dorian conquest. Before Hiram mounted the throne of Tyre the Phœnicians, after having taught the Greeks the use of the Assyrian weights and measures, the art of mining,

and of alphabetic writing, had finally retired from the coasts of Hellas.[1]

The Cadmean legend affirms that the Greeks obtained the alphabet directly from the mariners of Tyre. There is however an argument, not without weight, which seems to indicate that they acquired it, possibly at a still earlier period, through some Aramean channel. The form taken by the Greek names of the Semitic letters indicates an Aramean rather than a Phœnician source. The final vowel which distinguishes the Greek names *alpha* and *beta* from *aleph* and *beth* has to all appearance been derived from what is called the 'emphatic *aleph*,' a post-fixed article which is characteristic of the Aramean idiom. The Greek alphabet may have been obtained, as Professors Jebb and Sayce have supposed, from Aramean merchants of the Gulf of Antioch, who may have crept along the coast before the Sidonian sailors steered across the open sea. If this hypothesis be accepted, the very ancient differences which characterize the Eastern and Western branches of the Greek alphabet receive an explanation. We may still give credit to the Cadmean tradition, which affirms that the Bœotians and other inhabitants of the mainland of Hellas received their alphabet from Tyrian or Sidonian traders, while the Ionians of Miletus and Halicarnassus, and the Dorians of Rhodes, may have obtained it from the

[1] See Duncker, *Hist. of Antiquity*, vol. ii. pp. 77–87, 302–305.

Solymi and other Semitic tribes of Lycia and Cilicia with whom they were in approximate geographical contact, and who must have belonged to the Aramean branch of the Semitic stock. As it was the Ionian alphabet which ultimately became the definite alphabet of Greece, this would account for the Aramean garb in which the names of the Greek letters appear.

Another hypothesis may, however, be suggested, which I venture to think accords better with the epigraphic evidence, and also derives curious confirmation from recent investigations into the origin of the metric systems which prevailed in Greece.[1] Two standards of gold weight, and two corresponding standards for silver coins, were employed—the light, called the Euboic, or old Attic, and the heavy, which goes by the name of the Phocaic. These were respectively derived from the two Semitic standards, namely, the light or Babylonian talent of 30·3 kilograms, and the heavy or Assyrian talent of 60·6 kilograms.[2] The two standards were transmitted to

[1] See Head, *Coinage of Lydia and Persia*, pp. 4 and 5.

[2] Our own partial retention of the ancient Babylonian numeration curiously exemplifies the capabilities of transmission, and the tenacity of life which are displayed by metrical systems. It is due to the Babylonians that we reckon 20 shillings to the pound, 60 minutes to the hour, and 90° degrees of latitude from the Equator to the Pole. The Babylonian numeration was not decimal but sexagesimal. They counted by *sossi* and *sari*, the *sossos* being 60, and the *saros* $60 \times 60 = 3600$. Hence an hour contains 60 minutes and 3600 seconds, and the circle is divided into 360 degrees. We reckon 20 silver units to

Greece by two independent trade routes. The heavy Assyrian talent passed by land to the Phœnicians, and by them was carried by sea to either side of the Ægean—to Rhodes and Ionia on the east, and to Bœotia on the west. On it was based the Phœnician silver standard, the stater of 230 grains, which became the ordinary standard of Greece. The light or Babylonian talent, on the other hand, found its way by the Euphrates to the Lydians, who constituted the western outpost of the Semitic race; Lydia, whose capital was Sardis, being in commercial relations with Babylon by the great land trade route which passed through Asia Minor. The Lydian silver standard, which was the stater of 170 grains, was transmitted to Chalcis and Eretria, cities which, prior to the 7th century, were the most important trading communities of Greece, and had active commercial relations with the opposite Asiatic coasts. The so-called Euboic standard, based on the Lydian, and ultimately on the Babylonian, coming by land through the Aramean region, spread from Chalcis to Athens and Corinth. The other, or Phocaic standard, based on the Phœnician and ultimately on the Assyrian, and transmitted by sea through the agency of Tyrian merchants, was used in the cities of Ionia and the islands of the Ægean.[1]

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the gold unit because our silver unit represents half a silver shekel, and the Babylonian silver shekel was one-tenth of the gold shekel.

[1] The rivalries which existed in the Ægean trade may be illustrated by those of the Portuguese and English factories at Goa and Surat, or

These investigations, based on the unimpeachable evidence of the weights of coins, prove that there were two independent channels by which Semitic culture reached the Greeks.

There were also two types of the Semitic alphabet which prevailed in Greece from the remotest period to which epigraphic evidence extends, and whose geographical distribution coincides with that of the two metric standards. We have the Chalcidian, or old Attic type, distinguished by the Western *lambda* ⅃, and the Ionian, or new Attic type, which employed the Eastern *lambda* Λ. Since Greek colonization in Italy dates from the remote period of the mercantile supremacy of the Chalcidians, the Italic alphabets inherited the Chalcidian forms, and hence the two primitive alphabetic types have perpetuated themselves in such Latin forms as L C S R Q X, which correspond to the Greek symbols Λ Γ Σ Ρ Κ Ξ.

It does not seem improbable that the two great trade routes by which the Greeks obtained the two primitive metric standards were also the channels by which the two primitive and persistent types of the Greek alphabet were transmitted. On this hypothesis, the peculiarities shared by the Chalcidian, the old Attic, and the Latin alphabets, may be attributed to an influence ultimately Aramean; while the alphabet of Ionia,

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at Macao and Hong Kong, and by the concurrent circulation of Mexican dollars and English sovereigns in Eastern trade.

which finally became the standard alphabet of Greece, together with the Corinthian alphabet, which seems to have been merely a less developed form of the Ionian, would be traceable to the Phœnicians.[1]

It would thus be possible to explain how the Phœnician letters, *φοινικήϊα γράμματα*, came to bear Aramean names. The names by which we know the Greek letters were handed down by the grammarians of Athens, the centre of Hellenic literary culture. When the Athenians discarded the Chalcidian forms of their letters as well as their Chalcidian standards, there is no reason for supposing that they also discarded the familiar Aramean names, which doubtless had come from Chalcis, together with the symbols which they designated. We are only acquainted with the name of one Dorian letter, and it is worthy of note that it exhibits a Phœnician form, *san*, and has not, like the rest, been Arameanized into *sana*. Hence it may be inferred that there were two distinct channels through which the names of the letters were transmitted to the Greeks.

§ 4. THE CADMEAN ALPHABET.

The story of Cadmus designates the Island of Thera as the earliest site of Phœnician colonization in the Ægean. The epigraphic evidence accords with

[1] The transmission must in any case have been earlier than the 7th century, when the great transformation of the forms of the Aramean letters began. See p. 251 *supra*.

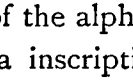
the indications of the legend, and leads to the conclusion that Thera may be regarded as the first spot of European soil on which words were written. In this island inscriptions have been found in which, though the language is Greek, the forms of the letters are of a most primitive Phœnician type, belonging to an earlier stage of the Semitic alphabet than the Moabite stone itself.

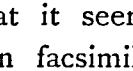
The island of Thera, now called Santorin, is an extinct volcano. The crater, now partially submerged, forms a land-locked harbour, whose central position and security from attack fitted it admirably for the site of a commercial station for the Tyrian merchants.

The two ancient cemeteries of Mesa-Vouno and Exomiti, buried more or less beneath the ashes of an eruption, probably date from the time when the Dorians first established themselves in the island. From these cemeteries have been obtained upwards of twenty inscriptions traced on blocks of lava or basalt. No absolute date can be assigned to these records, as they consist of little more than the mere names of the Dorian settlers whose graves they covered, but their relative antiquity can be decided without difficulty. Excluding a few of more recent origin, the rest can be arranged in a chronological series extending over two or three centuries; the latest, written from left to right in a Greek alphabet approaching to the Abu Simbel type, may be assigned to the seventh century; others, still older, are boustrophedon; while four or five, written

from right to left in letters of Phœnician style, may be pronounced without hesitation to be the oldest extant monuments of the alphabet of Greece.

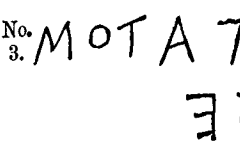
The Thera inscriptions are of such cardinal importance in explaining the formation of the Greek alphabet, that it seems desirable to place before the reader in facsimile the more characteristic examples.[1]

No. 1.  The first, which reads ΔΟΡΙΕΥΜ (*Δοριεύς*), though a mere name, is itself a record of the Dorian conquest, which Thucydides places eighty years after the Trojan war. The letters are purely Phœnician with the exception of two, *yod* and *tsade*, which have been somewhat modified.

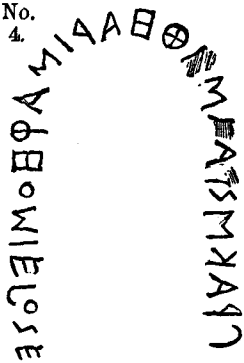
No. 2.  Hardly less primitive is the name ΚΡΙΤΟΠΗΥΛΟ (*Κριτοφύλου*), engraved on a rude stone found in the cemetery of *Μέσα-Βουνὸν*. We have a diminutive circle representing both o and *ου*, and the angular *iota*, while *π* retains the hook-shape which it has on the Moabite

[1] The Thera inscriptions have been repeatedly engraved and discussed. See especially the elaborate treatise by Böckh, *Ueber die von Herrn v. Prokesch in Thera entdeckten Inschriften*, printed in the Berlin Transactions for 1836, pp. 41 to 101; Ross, *Inscriptiones Græcæ Ineditæ*, vol. ii., p. 82, Nos. 199 to 202, vol. iii., No. 247; Rangabé, *Antiquités Helléniques*, p. 11; Le Bas, *Inscriptions des Iles de la Grèce*, plate 5; Franz, *Elementa Epigraphices Græcæ*, p. 51; Michaelis, *Annali dell' Instituto di corrispondenza Archeologica*, vol. xxxvi., pp. 246 to 269, plate R, figs. 3 and 4; Lenormant, *Études*, in *Revue Archéologique*, N.S., vol. vii., p. 273; Kirchhoff, *Studien*, p. 49.

stone. The combination ΠΗ shows that *phi* Φ had not yet been invented, and that *eta* retained the Semitic power of a breath.

No. 3. 

The next inscription is more than a mere name, and is of curious interest as being the oldest Greek sentence in existence. It reads ΕΠΑΓΑΤΟΜ ΕΠΟΙΕ (*Ἐπάγατος ἐποίει*), and must be of nearly the same date as the two preceding records. The sloping cross-bars of *α* *ϵ* and *τ* are in the Semitic style.

No. 4. 

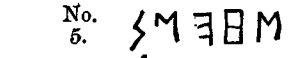
The next record, which was first published by Michaelis in 1864, is less rude in execution, and has the words divided by lines, but still is not materially later in date, as is proved by the forms of the usual test letters, more especially by the rounded *π* and the small *o*. It reads

ΠΡΑΚΜΙΛΑ | [Ε]Μ[Ι] | ΘΗΑΡ[Υ]ΜΑΦΗΟΜ | ΕΠΟΙΕ

(*Πραξίλα εἰμι, Θαρρύμαχος ἐποίει*).

This inscription is important as exhibiting the expedients by which the sounds of *theta*, *xi* and *chi* were denoted in the earliest stage of the Greek alphabet. The letter ⊗, as in Phœnician, is an unaspirated dental, the letter H being appended in order to obtain the sound of *th*. Afterwards the aspirate was omitted,

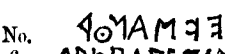
and the Phœnician *teth* acquired the power of *theta*. Equally significant is the use of ΦΗ *koppa-eta*, for *chi*. This suggests the explanation that Ψ, the Western form of *chi*, was differentiated from *koppa* Φ by opening the loop; the subjoined *eta* being dropped, as in the case of ⊗. The combination ΚΗ, which expresses the sound of *chi* before the upper vowels, explains the similar formation of Χ, the Eastern symbol for *chi*, as a differentiated form of *kappa* Κ.[1] At this time *samekh* had not obtained its later power of *x*, which is expressed by the combination *kappa-san* ΚΜ. Unfortunately the reading εἰμι is not clear, but the next inscription will show how the diphthong ει was written.

No. 5.  The later date of the record ΑΠΡΩΝΟΜΗΕΜΙ (Ἄπρωνός εἰμι) is shown by the angular form acquired by π, by the distinction between the long and short ο, and by the use of *eta* as a vowel in the combination ΗΕ for ει. The distinction between the forms of *san* and *mu* may also be noted.

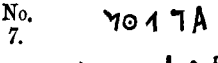
The best known of the Thera records is a block of basalt, now in the Museum at Athens, which contains ten names of the Lacedæmonian type in a Doric dialect. They were evidently inscribed at successive

[1] This explanation of the origin of *chi* is supported by transitional forms, in the West, and or in the East. It is worthy of note, as an indication of the origin of the forms, that the western alphabets, which have Ψ for *ch*, retain *koppa*, while the eastern alphabets, which have Χ for *ch*, prefer *kappa*.

dates, six being written from right to left, and four from left to right. The letter *eta* now appears as a vowel in the name ΜΟΦΗΛΑΜ (*Μάλης*); we have also ΚΗ for *ch*, ΚΜ for *x*, and ⊗, without the added aspirate, for *th*. A central dot distinguishes the long o in the earlier names on this block and the short o in the later ones. The angular *iota*, the closed *eta*, *koppa* and *san*, are still retained, while *delta* assumes the later form Δ. The most characteristic of these records are:—

No. 6.  ΡΕΚΜΑΝΩΡ ΑΡΚΗΑΓΕΤΑΜ (*Ῥηξάνωρ Ἀρχαγέτας*).

No. 7. ΑΓΛΩΝ (*Ἄγλων*).

No. 8.  ΟΡΘΟΚΛΗΜ (*Ὀρθοκλῆς*).

These names may be taken to illustrate the two chief stages in the transition from the alphabet of Phœnicia to the alphabet of Greece; the change in the direction of the writing and in the value of the characters.

The Thera inscriptions cover the whole period during which the change in the direction of the writing took place. The older records, No. 3, for instance, are written in horizontal lines from right to left, according to the Semitic practice. Somewhat later we find a curved script running round the margin of the stone, as in No. 4, and which suggested the serpentine writing seen in the Athenian epitaph on p. 35. This was succeeded by *βουστροφηδὸν*, or 'plough-wise' writing, as in

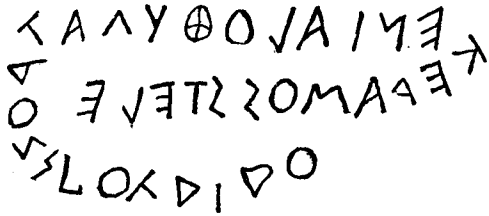
No. 6, the lines proceeding alternately from right to left, and from left to right, just as oxen when ploughing draw the alternate furrows in opposite directions.[1] Finally, the more convenient habitude prevailed, all the lines being written from left to right. The change of direction was plainly effected by a process of very gradual development, and must have occupied a lengthened period. Not only was the direction of the writing changed, but also the values of some of the symbols. The evolution of the vowel signs is the most distinctive peculiarity which differentiates the Greek and Semitic alphabets. We have repeatedly had occasion to observe that the consonantal alphabet which sufficed for Semitic speech was unsuited for languages in which the vowels are fixed and radical. As in the case of the Indian, Iranian, and Mongolian alphabets, the Greeks developed symbols for the vowels out of the breaths and semiconsonants of the Semitic alphabet. When the earliest of the Thera inscriptions were written, five true vowels, *alpha*, *epsilon*, *iota*, *omicron*, and *upsilon*, had already been evolved out of *aleph*, *he*, *yod*, *'ayin*, and *vau*. During the

[1] It has been noticed by Böckh and Franz that in the earliest examples of boustrophedon writing the first line is from right to left, and the second from left to right. In inscriptions of a somewhat later date the first line is from left to right, and the second from right to left. The superior convenience of the new direction caused it to be selected preferentially by the scribe. The chief value of Böckh's acute observation is the proof which it affords of the extremely gradual nature of the change.

period covered by the Thera records, symbols were evolved to denote $\bar{e}$, $\bar{o}$, and *th*, but the double consonants ξ, ψ, ϕ, and χ, continued to be expressed by $\kappa\sigma$, $\pi\sigma$, πh, and κh or *qh*. The letters *san* and *koppa*, the angular *iota*, and the closed *eta* are retained.

The inscriptions from Thera exhibit better than any others the early form and the progressive evolution of the Cadmean alphabet. From other regions a few records have been obtained belonging to the same primitive period, which may now be briefly noticed.

From Athens we have records which must be assigned to a very early but somewhat different type of the Greek alphabet. The oldest[1] is an epitaph engraved on a fragment of Pentelic marble, now in the Museum at Athens. It was discovered in 1836, built into the wall of a cottage.[2]



ΕΝΙΑΛΟ ΘΥΓΑΤΡΟΣ ΣΠΟΥΔΙΔΟ ΚΕΡΑΜΟΣ ΣΤΕΛΕ

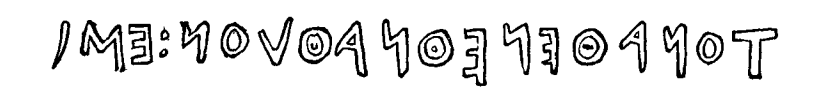
(*Ἐνιάλου, θυγατρὸς Σπουδίδου κεραμ[έ]ως, στήλη.*)

[1] The boustrophedon inscription from Athens (Böckh, *Corpus*, No. 1.) is probably not quite so early. It has ⊟ = *h*, ΓΘ = ϕ, and M = σ.

[2] Pittakis, *Ephem.* 167. Cf. Rangabé, *Antiq. Hellén.*, plate i., No. 6; Kirchhoff, *C. I. A.*, No. 467; Böckh, *Corpus*, No. 5; Le Bas, *Voyage*, plate ii., No. 3.

The age is apparently the same as that of the Thera inscriptions of intermediate date, no distinction being made between *ĕ* and *ē*, and *ov* being represented either by **O** or **OY**. But *sigma* takes the place of *san*, *lambda* has the Western form, and *iota* is straight.

Somewhat later is the celebrated inscription on a Panathenaic vase found at Athens, known as the 'Burgon Vase.'[1]



ΤΟΝ ΑΘΕΝΕΩΝ ΑΘΛΟΝ : ΕΜΙ

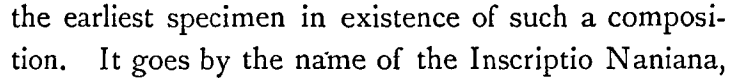
(*τῶν Ἀθηνέων ἆθλον εἰμι.*)

Adjacent to Thera is the island of Melos, now Milo, which appears to have been colonized by Phœnicians from Byblos (Gebal) not long after the Tyrian settlement on Thera. Thucydides (v. 84) has preserved the tradition that the Dorians, at the time of their invasion, found the Phœnicians masters of Melos. From this island we have a series of inscriptions, inferior in date to the earlier records from the cemeteries at Thera, but of considerable value. The oldest of them is of much greater interest than the barren names contained in the Thera records, as it consists of a dedication to Apollo, in two lines of elegiac verse,[2]

[1] Böckh, *Corpus*, No. 33; Rose, *Inscript. Vet.*, p. 14; Millingen, *Vases*, plate i.

[2] The very name of *elegy* comes to us from this region. A 'reed' is *eleg* in Armenian. The elegies of Callinus of Ephesus, and

the earliest specimen in existence of such a composition. It goes by the name of the Inscriptio Naniana, being inscribed along one of the plinths of a votive column, brought from Melos, which has been for more than a century in the Nani Museum at Venice. A reduced facsimile, with the transliteration and translation of Franz, are given below.[1]



παῖ Διὸς, Ἐκφάντῳ δέξαι τόδ' ἀμενφὲς ἄγαλμα
σοὶ γὰρ ἐπευχόμενος τοῦτ' ἐτέλεσσε γρόφων.

"Jove gnate, accipe ab Ecphanto hoc sine reprehensione elaboratum donarium:
Tibi enim supplicans id perfecit scalpendo."

The date of this inscription is not very easy to determine. The direction of the writing, from left to right, is sufficient to show that it does not belong to the earlier stage of the Cadmean alphabet; and the use of open *eta*, which is not found in Ionia before the middle of the 6th century B.C., is an indication of date to which great weight has been attached. On the other hand, the angular *iota*, the diminutive **O**, the use of **ΠΗ** for *φ*, of **ΚΗ** for *χ*, of **ΚΜ** for *ξ*, and the retention of *san*, all point to an early date, while the *mu* with five

Archilochus of Paros were accompanied by the notes of the Armenian pipe or flute.

[1] Lanzi, *Saggio*, vol. i., p. 71; Franz, *Elementa*, No. 21, pp. 57 to 59; Böckh, *Corpus*, No. 3; Rose, *Inscriptiones*, plate xlii., p. 327; Lenormant, *Études*, p. 278.

strokes is actually older than any of the Thera forms. We must either assume a certain amount of archaistic survival or intention; or we may suppose, on the other hand, that the open *eta* was employed at Melos somewhat earlier than elsewhere. But, whatever the actual date may be, there can be no doubt that the Nani inscription belongs to the Cadmean alphabet in its later stage.[1]

The oldest of the records from the adjacent island of Thera plainly belong to an epoch decisively more remote. Not only is their execution rude in the extreme, manifesting no such literary or graphic habitude as is exhibited in the Nani couplet, but the writing is still in the Semitic direction, from right to left; while the letters, which in the Melos dedication have mostly acquired their familiar Hellenic outlines, are distinctively of Phœnician style, agreeing essentially with the forms used in the 10th century records on the vessels of Baal Lebanon.

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[1] The evolution of the alphabet of Melos has been discussed exhaustively by Ross, *Inscriptiones Ineditæ*, vol. iii., p. 4. Some thirty inscriptions, mostly mortuary records, are known. There are four successive epochs. The first epoch, represented by the Nani inscription, is characterized by the angular *iota*, H = *h*, by the use of *san*, and the absence of double consonants. In the second epoch *iota* is straight, and *chi* makes its appearance. In the third epoch *phi*, *xi*, and *sigma* are introduced, and H = *η*. In the fourth epoch *omega* appears. As we know that *omega* was developed as early as the middle of the 6th century, it is manifest that the three earlier epochs must extend over a considerable prior period.

Böckh assigned the Thera inscriptions to the epoch of the Persian war; Kirchhoff places them all, (*sampt und sonders,*) "in the second half of the 7th century, prior, possibly, to the 40th Olympiad," (620-617 B.C.), an attribution which Mr. Newton accepts, apparently without misgiving. With all deference to the opinions of such high authorities, dates so recent and so precise cannot be admitted without question. The Thera records, like the grave-stones in an English churchyard, are plainly the epitaphs of many successive generations; they exhibit the stages of a prolonged process of alphabetic evolution, covering the whole period during which the direction of the writing was gradually changed; beginning with the Semitic use, they proceed, through the circular, the snake-like, and the boustrophedon fashions, till the final direction from left to right is ultimately attained. At the commencement of the Thera period the Greek alphabet possessed only five vowels; at its close *cheth* had acquired a vocalic power, and an imperfect mode of discriminating between ŏ and ō had been devised. During this period *theta,* the oldest aspirated consonant, was developed out of *teth*—retaining its Semitic form, but acquiring a new phonetic value. To suppose that these changes must have required a century or two to bring about, does not seem to be an extravagant computation.

Still more extensive is the amount of evolution undergone by the Greek alphabet between the time of the last of the Thera inscriptions and our first fixed

date, which is supplied by the Abu Simbel records. During the Thera epoch only one aspirated consonant, *theta*, was evolved. Inscriptions from other localities, such as those from Melos, prove that the evolution of *chi* out of *kappa* was effected at some subsequent epoch, and that in the time of still later generations *phi* was differentiated from *theta*, the symbol for *psi* being finally devised. All these developments were effected during the period between the last of the Thera records and the date of the 7th century inscription at Abu-Simbel, in which ϕ, χ, and ψ, are found. If once the principle is grasped that no such thing as an arbitrary invention of graphic symbols is to be expected, but that alphabetic changes are brought about by gradual processes of evolution, whose operation is necessarily of extreme slowness, it will be obvious that it is needful to demand considerable periods of time for bringing about changes which at first sight may seem comparatively trivial. Instead of making the whole of the Thera inscriptions the work of men who were the contemporaries of the mercenaries of Psammetichus, as is done by Kirchhoff and Newton, it must be assumed that they constitute the mortuary records of many generations, spreading over a century or two at the least, a similar period being interposed between the inscriptions of Thera and those of Abu Simbel. We should thus have to go back to the 9th, or even to the 10th century B.C., as the date of the earliest extant monuments of the Greek alphabet, a

date which satisfactorily explains the resemblance of the letters to the 10th century Phœnician characters. Since the evolution of the two vowels η and ω occupied some two centuries, the fact that five out of the seven vowels had already been evolved at the time when the Thera records commence, makes it certain that the Thera inscriptions are by no means coeval with the introduction of the art of writing into the Ægean. As the extension of Phœnician commerce to the shores and isles of Greece may be placed as early as the 12th century, we should still obtain a period of two or three centuries for the evolution of the five primitive vowels out of the corresponding breaths and semi-consonants of the Semitic alphabet, and also for the changes in the forms of certain letters.[1] The epigraphic history of these earlier centuries may probably never be recovered, but nevertheless certain faint survivals from the first stages of development may possibly be detected.

The Cadmean legend, as recorded by Herodotus, while it designates Thera as the site of the first Phœnician colony, yet distinctly claims for Bœotia the glory of having been the birth place of the Greek alphabet. As in the case of Thera, a substratum of

[1] The radical transformation of *lambda* from the Semitic form to the Thera alone demands a lengthened period. The way in which the cross-bar was transferred from the bottom to the top, and from the right side to the left, will hereafter be explained.

fact probably underlies the legend. It so happens that in Bœotia itself no very ancient inscriptions have come to light; but the case is otherwise with the Phœnician colony of Corinth, the establishment of which was probably coeval, or nearly so, with the foundation of the settlement at Thebes. Now the primitive alphabet of Corinth, and of the Corinthian colony of Corcyra, founded in the 8th century (734 B.C.) exhibits, as has been already mentioned (pp. 103, 115, 171), extremely archaic forms of certain letters. Although the actual inscriptions[1] in which these characters occur

[1] The oldest actual inscription in the Corinthian alphabet is probably one written from right to left on a bronze tablet found in Corfu (Corcyra), inscribed 𐌀𐌊𐌀𐌐𐌀𐌍𐌌𐌏𐌔𐌐𐌏𐌉 (Λόφιος μ' ἀνέθηκε). It was first published by Vischer, *Epigraphische und Archäologische Beitrage aus Griechenland*, and has been phototyped by the Palæographical Society, plate 77 A. The date cannot be later than the 7th century B.C. We have also from Corcyra the 7th century boustrophedon epitaph on Arniadas, who perished in a sea fight, a facsimile of which is given by Riemann, *Recherches arch. sur les Iles Ioniennes*, i., p. 42, and by Ross, *Archäolog. Aufsätze*, ii., pl. 22; and the inscription on the tomb of Menecrates, assigned to the 45th Olympiad (Riemann, *Recherches*, p. 31.) Vischer has also engraved an ancient Corinthian sling bolt found in Corfu, stamped on one side with the letters 𐌁𐌁 for *βέλος*, and on the other 𐌒𐌏 for *Κορινθίων*. From Corinth itself nothing is older than the names on the Dodwell vase (Böckh, *Corpus*, No. 7), which may be assigned to the 7th century. We have 𐌀𐌂𐌀𐌌𐌁𐌌𐌏𐌍 (*Ἀγαμέμνων*), 𐌘𐌉𐌋𐌏𐌍 (*Φίλων*), 𐌃𐌏𐌓𐌉𐌌𐌀𐌗𐌏𐌌 (*Δορίμαχος*), 𐌂𐌀𐌒𐌏𐌍 (*Πάκων*). The difference which had established itself between the Eastern and Western alphabets is shown by comparing the letters on this vase with those on the earliest inscribed coin, which was struck at Halicar-

may not be older than the 7th century, to which Kirchhoff refers them, they seem to be survivals from a stage of the Semitic alphabet earlier than that represented by any of the Phœnician inscriptions, going back possibly to the 12th century, when the Phœnicians first reached the shores of Greece. These Corinthian letters, which seem to be transitional between the oldest known forms of the Semitic letters and their Egyptian prototypes, are *beta* , which approaches the Hieratic *b*,[1] and *epsilon* , which retains the closed form of the Hieratic character .[2]

The ancient alphabets of Attica and Argos have also preserved older forms of *lamed* , which is at Athens, at Argos, and at Thera. Our own L retains the Semitic form, and is actually older than the Greek Λ, which departed from the Semitic type at some time earlier than the earliest of the inscriptions of Thera.

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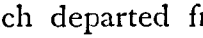
nassus about the end of the 7th century. The legend, which runs from right to left, reads  (Φάννος εἰμι σῆμα).

[1] The letter *beta* does not happen to occur in any of the Thera inscriptions; but at Melos, an island which preserved a very archaic type of the primitive alphabet, the oldest form of *beta* is . In the neighbouring islands of Paros and Siphnos, and at Thasos, one of the primitive Phœnician settlements, the form is , which if reversed can easily be obtained from the Phœnician , but not from the Greek .

[2] It may be a question whether the closed *e* was not derived from *cheth*.

§ 5. THE DATED MONUMENTS.

The formation of the Greek alphabet out of the Phœnician has necessarily been investigated by the aid of monuments to which only approximate dates, relative rather than positive, are assigned.

The Abu Simbel record, written at the end of the 7th century, affords the first absolutely firm standing ground. During the next two centuries, up to the end of the 5th century, when the Greek alphabet had assumed its final form, its history can be traced by means of dated inscriptions, scanty indeed in number, but sufficient for the purpose,

Without attempting any systematic account of Greek inscriptions, it may nevertheless be possible, within reasonable limits of space, to give some brief notice of certain selected monuments which may be regarded as the corner-stones of the structure of Greek epigraphic science.

The oldest dated inscriptions which have been found on Hellenic soil belong, like the Abu Simbel records, to the Ionian type of the Greek alphabet. They come from the neighbourhood of Miletus, a city which during the 7th and 6th centuries was the most opulent and powerful of Greek communities.[1] Unrivalled in her manufactures and her commerce, Miletus had encircled the Euxine with a girdle of prosperous

[1] See Bunbury, *Ancient Geography*, vol. i., p. 103.

colonies; she possessed a factory in Egypt; and the proverbial luxury of her Italian allies the Sybarites was a reproduction of the mode of life which prevailed in the Asiatic city. The wealth of the Milesians was freely lavished on the shrine of the Didymean Apollo, which crowned the headland of Branchidæ, some ten miles south of Miletus. Of this vast temple, "the mighty ruins lie as they originally fell, piled up like shattered icebergs."[1] Two majestic columns, more than 60 feet in height, with the connecting architrave, alone remain erect, and serve as landmarks for passing mariners. An avenue of statues bordered the Sacred Way which led up to the temple from the sea. The chairs occupied by these seated figures, several of which are now in the British Museum, bore inscriptions, which are necessarily anterior to the beginning of the Persian war, when, in revenge for the revolt of Miletus, the temple was destroyed by the Persians (494 B.C.).

These inscriptions are of various dates, ranging over a considerable portion of the 6th century. One of the more recent, which was found built up into the walls of a modern house, bears the name of Histiæus, who was tyrant of Miletus at the time of the expedition of Darius against the Scythians,[2] and may be assigned with considerable probability to the year

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[1] Newton, *Travels and Discoveries in the Levant*, vol. ii., p. 147.

[2] Herodotus, iv., c. 137.

520 B.C., or thereabouts. It is a mutilated inscription[1] in three boustrophedon lines, and reads as follows:—

[ꓘOI]AITꓘI
[AᴎEΘ]HKETΩ
[Iᴎ]ΩΛΛOᒣ

(*Ἰστιαῖος ἀνέθηκε τῷ Ἀπόλλωνι*)

Somewhat earlier, probably about 550-530 B.C., is the votive inscription on the chair of the statue of Chares, son of Klesis, tyrant of Teichiousa, a fortress near Miletus. It was found by Mr. Newton *in situ*, beside the Sacred Way, and has been removed to the British Museum. It is a late example of the boustrophedon writing, as is shown by the occurrence of the open *eta*, and is the earliest known inscription in which the new letter *omega* appears. The facsimile below is on a scale of one-seventh of the original.[2]

Χάρης εἰμι ὁ Κλέσιος, Τειχιούσης ἀρχὸς
Ἄγαλμα τοῦ Ἀπόλλωνος.

These two inscriptions, which are boustrophedon in

[1] See the woodcut in Newton, *History of Discoveries at Halicarnassus*, &c., vol. ii., part 2, p. 787.

[2] See the phototype published by the Palæographical Society, plate 76; Newton, *History of Discoveries*, vol. ii., p. 784, plate 74, and plate 97, No. 72; Kirchhoff, *Studien*, p. 17; Cf. Thucydides, viii. 26, 28.

direction, are of importance as recording the progress in the evolution of the Ionian alphabet during the century which followed the expedition of Psammetichus. They are the first inscriptions of definite date in which the new letter *omega*, Ω, is found. They also differ from the records at Abu Simbel in exhibiting the later form of *sigma*, ϟ instead of Ϟ. In the earlier inscriptions from Branchidæ, *eta* is closed as at Abu Simbel, in the later ones it is open. The Didymean inscriptions belong, according to Mr. Newton, to the years 580–520 B.C., a computation which does not differ materially from that of Kirchhoff, who assigns them to the period 540–500 B.C.[1]

To the 6th century must also be assigned the celebrated duplex Sigean inscription, which was brought to England from the Troad in the last century, and is now in the British Museum. It has been the subject of much controversy from the time of Bentley to our own days, but is now universally admitted to be genuine, and not, as was maintained by Böckh, a pseudo-archaic fabrication belonging to a much later period.[2] On palæographical grounds the upper inscription must be pronounced to be somewhat older than the Statues of Histiæus and Chares, but contemporaneous with the earlier records from Branchidæ. It is boustrophedon in direction, it contains the new

[1] Newton, *Essays*, pp. 77, 102; Kirchhoff, *Studien*, pp. 15 to 25.

[2] Newton, *Essays*, p. 102; Hicks, *Manual*, p. 6; Kirchhoff, *Studien*, p. 19; Böckh, *Corpus*, No. 8.

letter *omega*, and is noteworthy as exhibiting *phi* in the archaic form ⓪, which is transitional between the old form of *theta*, ⊗, from which it was derived, and the forms Ⓘ and Φ, which the letter afterwards assumed.

Our next monument brings us down to the middle of the 5th century, and is not without historical interest.

We learn from Suidas that Herodotus fled from his native city of Halicarnassus in order to escape from Lygdamis, the local dynast, and that he afterwards returned and took an active part in the expulsion of the tyrant. These facts fix within narrow limits the date of an inscription brought by Mr. Newton from Budrum, which records a convention made between Lygdamis and the people of Halicarnassus.[1] This inscription, which we may place between the years 460 and 445 B.C., completes the history of the Ionian alphabet, and shows that by the middle of the 5th century it had practically attained its final form, with the exception of some trifling changes which took place in the 104th Olympiad. About half a century after it had been

[1] Newton, *History of Discoveries*, plate 85; Kirchhoff, *Studien*, pp. 4 to 11. The changes in the primitive Greek alphabet which are exhibited in the Lygdamis inscription are shown in col. viii. of the Table on p. 59. We note the disappearance of Ϙ and Ϝ, and the presence of the new letters Φ, Χ, Ψ, Ω. The sound *ks* is represented by Ξ, and Η denotes the vowel only. The writing is regular and square, the older forms of Α Ε Θ Λ Ξ have disappeared, and all the letters have assumed their final classical forms with the exceptions of Κ for Κ, Μ for Μ, and Ν for Ν.

perfected in Ionia it became the common alphabet of Greece, being formally adopted as the official alphabet of Athens by a decree of the people passed in the archonship of Euclid, 403 B.C. (Ol. 94. 2), and soon it replaced the various local alphabets which had hitherto prevailed throughout the rest of Hellas.[1]

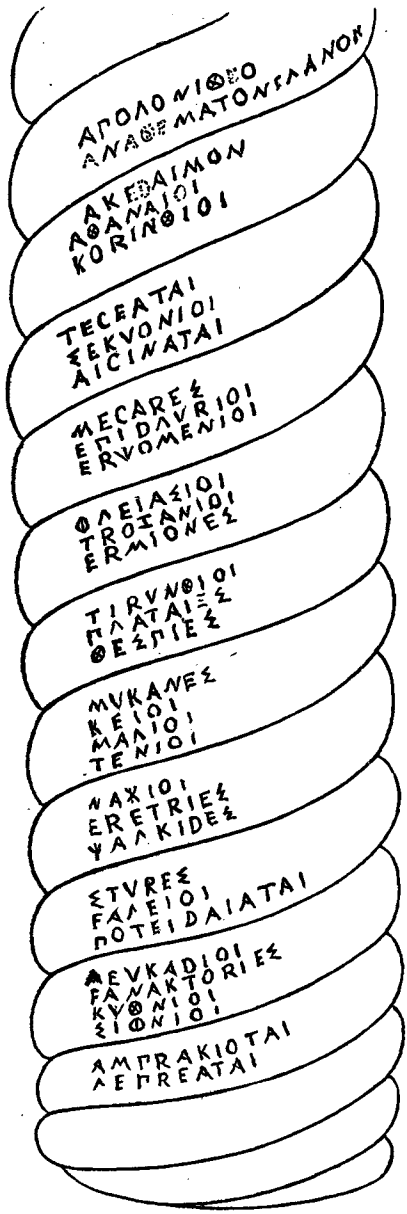
For the history of these local alphabets the materials are less complete than for the alphabet of Ionia. The dated monuments belonging to the 7th and 6th centuries are exclusively of Ionian origin. It is not till the middle of the 5th century, when the Ionian

[1] The stages in the evolution of the Ionian alphabet, as disclosed by the monuments which have now been discussed, were as follows:—

In the 7th century the writing is either boustrophedon, or from left to right. The six vowels A E H I O Y and the new consonants Φ X Ψ are found; the letters *vau* and *san* have disappeared; and the use of *koppa* is exceptional. *Omega* is still absent; O has three values, o, ov, ω; *sigma* has the forms ϟ ϟ ϟ; *eta* is closed, and represents sometimes *h* and sometimes *ē*, but the aspirate is not invariably expressed. *Iota* is reduced to a vertical stroke. The absence of *zeta* must be regarded as accidental.

The sixth century is characterized by the partial continuance of boustrophedon writing, by the final disuse of *koppa*, by the appearance of *omega*, and by the adoption of the four-barred form of *sigma* ϟ. At the beginning of the century *eta* is closed, afterwards it is open.

By the middle of the 5th century the Ionian alphabet practically attained its final development. *Eta* is now used exclusively as a vowel. *Theta* has only an interior point instead of a cross, the cross-bars of A and E are horizontal, and the two legs of Λ are of equal length. The only remaining archaisms are in the forms of K M N and Σ, which are ϰ M N ϟ.



alphabet had already reached its final development, and was about to be adopted as the definitive alphabet of Greece, that we have dated monuments belonging to any of the western types.[1]

The first of these inscriptions which claims notice bears a very precise date, and in itself is of singular historic interest. When the terror of the Persian domination was at last ended by the crowning victory at Platææ, the allied States of Hellas, in gratitude for their deliverance, dedicated to the Delphian Apollo a tenth part of the Persian spoil.[2] The offering took

[1] Some of the inscriptions from Corcyra already mentioned (p. 42, note), though without absolute dates, undoubtedly belong to the 7th century.

[2] See Herodotus, ix., 81; Thucydides, i., 132; Pausanias, x., c. 13, § 9.

the form of a golden tripod, supported by a three-headed serpent of bronze, on the coils of which the Lacedæmonians inscribed the names of those Hellenic States which had shared the glory of repelling the invader. The golden tripod disappeared in 357 B.C., when Delphi was plundered by the Phocæans at the beginning of the 'Sacred War;' but the bronze serpent remained, and fortunately escaping the greed of Sulla and Nero, was to be seen at Delphi in the time of Pausanias. With other spoils of Hellas, it was removed to Byzantium by Constantine, to adorn his new seat of empire, and still stands in the Hippodrome (Atmeidan), where it was placed by Constantine. In 1675 the venerable trophy was nearly perfect. The heads of the serpent have now disappeared, but the accumulation of soil has preserved the lower coils from serious injury. During the occupation of Constantinople by the Western Powers at the time of the Crimean war, excavations were undertaken by Mr. Newton, then Vice-Consul at Mytilene, which disclosed the inscriptions on the lower coils. The battle of Platææ was fought in 479 B.C., so that the date of the monument can hardly be later than 476. A facsimile of this most interesting record,[1]

[1] The alphabet of this inscription, which forms the cardinal example of the Peloponnesian script, is given in column x. of the Table on page 59. It differs from the contemporary alphabet of Ionia in the retention of the digamma F, the use of X instead of Ξ for *ks*, and of Ψ instead of X for *ch*. The letters *psi* and *omega* are

which has hitherto been practically inaccessible to English students, is appended. It is so easy to decipher that no transliteration is needed.[1]

Of almost precisely contemporaneous date is another record of great historic interest and considerable epigraphic importance. This is the dedication stamped upon an Etruscan helmet of bronze, now in the British Museum, which was found at Olympia in 1817. This helmet, as we gather from the inscription, was a trophy dedicated to the Olympian Zeus by Hiero I., son of Deinomenes, king of Syracuse, after his great victory off Cumæ, in which he finally shattered the naval supremacy of the Etruscans. The battle, which was celebrated by an ode of Pindar, was fought in the year 474 B.C. The inscription being in bronze has special palæographic value, the forms of the letters having none of the indefiniteness which is so often a

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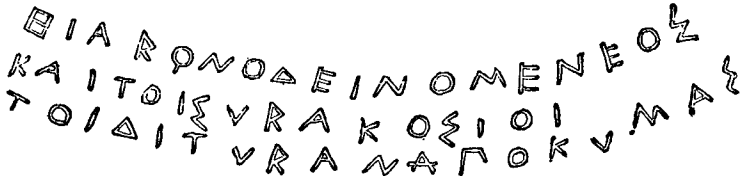
wanting, but *phi* is present, and *gamma* has the crescent form C. As to these three letters, F X C, the Peloponnesian alphabet agrees with the alphabet of Italy. A facsimile of the inscription is given by Dethier and Mordtmann, *Epigraphik von Byzantion*, in vol. xiii. of the Vienna Transactions (1864); and another, somewhat clearer, by Flick, in Fleckeisen's *Jahrbücher für Philologie*, Suppl. iii., part 4 (1859). Flick, however, wrongly reads MEVKADIOI for ΛΕVKADIOI, and gives the form of *theta* incorrectly in KVΘNIOI. The reading of line 2 is uncertain. Cf. Hicks, *Manual*, p. 11.

[1] On each coil three names are normally inscribed. On the 7th the name Τήνιοι has been squeezed in. Being more deeply engraved than the rest, and in Ionic instead of Doric, it seems to have been a subsequent addition made by the Tenians themselves. See Herodotus viii., 82.

source of uncertainty in lapidary records. A reduced facsimile,[1] with a transliteration into classic Greek, is given below.



HIARΩN O ΔEINOMENEOΣ
KAI TOI ΣVRAKOΣIOI
TOI ΔI TVRAN AΠO KVMAΣ

(Ἱέρων ὁ Δεινομένους καὶ οἱ Συρακούσιοι, τῷ Διὶ, Τύῤῥηνα, ἀπὸ Κύμης.)

Syracuse being a colony of Corinth, the inscription is in a Doric dialect, and in a form of the Western alphabet.[2]

The dates of the inscriptions on the helmet of Hiero and on the Platæan trophy being so exactly fixed (Olym. 76), they are used as epigraphic standards, by comparison with which the approximate age of a considerable number of undated records may be determined.

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[1] Reduced by photography from the excellent phototype published by the Palæographical Society, plate 77 B. Cf. Böckh, *Corpus*, No. 16; Kirchhoff, *Studien*, p. 95; Rose, *Inscriptiones*, plate 7; Newton, *Essays*, p. 106.

[2] It will be noticed that the closed *eta*, which had disappeared for more than a century from the Ionian alphabet, retains its ancient power as an aspirate. The R is tailed, and the long *o* is differentiated by a subscript dash.

As an instance of the way in which the method of comparative epigraphy can be applied, we may take a document of some historical importance, the well-known treaty between the Eleans and the Heræans, which is interesting as being the most ancient diplomatic document in existence. The letters are stamped on an oblong bronze tablet which was brought from Olympia by Sir William Gell, and is now in the British Museum. The tablet is provided with two loops, by means of which it must have been originally affixed to the walls of one of the temples at Olympia, thus providing in a simple manner for the safe custody of the document, and for easy reference to its contents. This inscription is so accessible, and has been so repeatedly engraved,[1] that it is hardly necessary here to reproduce it in facsimile, but the free translation given by Mr. Newton may be of interest:—

"The treaty between the Eleans and the Heræans. Let there be an alliance for one hundred years, commencing from this year. If there be need of conference or action, let the two States unite, both for war and all other matters. Those who will not join shall pay a fine of a silver talent to the Olympian Zeus. If any, whether citizen, or magistrate, or deme, destroy what is here inscribed, the offending party shall be subjected to the fine here specified."

In seeking to determine the date of this treaty, it is to be observed that the alphabet is Peloponnesian, and

[1] The best facsimile is that of the Palæographical Society, plate 78. Cf. Böckh, *Corpus*, No. 11; *Encyclopædia Britannica*, vol. xiii., pl. 1; Rose, *Inscriptiones*, p. 29; Hicks, *Manual*, p. 7; Newton, *Essays*, p. 104.

may therefore be brought into comparison with that of the Platæan trophy. The two alphabets are given side by side in the Table on p. 59. As a criterion of date we may note the forms of the letters γ δ ϵ ϝ λ ο ρ σ. In each of these instances the merest tyro can see that the Elean forms are decisively more archaic. How much older they may be is a matter for the trained instinct of epigraphists to decide. Half a century, or a little more, an estimate intermediate between those of Kirchhoff and Böckh, might probably suffice to effect the changes in question.[1]

Before the adoption of the Ionian alphabet at Athens in 403 B.C. a local alphabet of the Eubœan type prevailed in Attica. Its history is chronicled by a considerable number of dated records, several of which are not devoid of historical interest, though none are of any great antiquity.[2] The old Attic alphabet, in its

[1] The Platæan trophy belonging to the 76th Olympiad, the Elean treaty is assigned by Kirchhoff to the 70th Olympiad (500 B.C.), and to the 50th (580 B.C.) by Franz and Böckh. There are later treaties which bear definite dates, *e.g.*, one between Athens and Chalcis, B.C. 445; between Athens and Rhegium, and between Athens and Leontini, both executed in 433 B.C.; between Athens and Bœotia, 395 B.C.; and between Athens and Sparta, 271 B.C. Among the dated monuments in the Lacedæmonian alphabet we may note the archaic inscription on the base of a statue of Zeus recently discovered at Olympia. It seems to have been dedicated at the time of the revolt of the Helots, 464, in order to secure the favour of Zeus. There is also the list of the contributions of the allies of Sparta towards the prosecution of the Peloponnesian war, 431 B.C.

[2] They are given by Kirchhoff, *Corpus Inscriptionum Atticarum*,

primitive form, is exhibited in inscriptions which have been already given (p. 35). Of the dated records, one of the earliest is the monument which was erected to the memory of the Athenians who perished in the expedition against Thasos (B.C. 465–464), when 10,000 citizens and allies were killed by the Thracians at Drabescos.[1] Just twenty years later comes a treaty between the Athenians and the Chalcidians of Eubœa, which dates from 445 B.C., while from the year 454 we have the lists of the tribute paid by the Athenian allies, and from 434 onwards the quadrennial registers of the treasures deposited in the Parthenon. Of much greater interest is a tablet which ranks among the choicest treasures of the British Museum.[2] This is a fragment of the monument erected in memory of Callias and the 150 Athenians who fell at Potidæa in 432 B.C. The upper part of the epitaph, on which the names of the slain were inscribed, has unfortunately perished, but the lower portion, which is in a fairly perfect state, contains twelve elegiac verses commemorating the "deathless glory of these sons of Athens who left their bodies before the gates of Potidæa."[3]

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and by Hicks, *Manual of Greek Historical Inscriptions*, and several are described in Newton's *Essays*.

[1] Kirchhoff, *C. I. A.*, No. 432. Cf. Thucydides, i., 100; Pausanias, i., c. xxix, § 4.

[2] Attic Room, Inscription xxxvii. An excellent phototype has been published by the Palæographical Society, plate 79.

[3] Cf. Thucydides, *i.*, 63.

Among the last of the documents written in the old Attic alphabet, which was superseded for official purposes by the Ionian alphabet in 403 B.C., is an inscription, now in the British Museum, relating to the reconstruction of the Erechtheum, which had been destroyed by the Persians. It is dated in the archonship of Diocles, B.C. 409–8, and contains the report of a special commission, appointed by a decree of the people, to make a survey of the progress of the works. In this elaborate document the exact state of the building is minutely described; account is taken of every block of marble, whether finished or unfinished, whether in position or not. A second inscription records the exact sums which had been paid to the various artists and masons.[1]

The old and the new Attic belong to two separate types of the Greek alphabet, the Western and the Eastern. The chief differences are—

	g	*l*	*ks*	*ps*	*ē*	*ō*	*h*
Old Attic,	Λ	⊬	Χξ	Φξ	E	O	H
New Attic,	Γ	Λ	Ξ	Ψ	H	Ω	

The foregoing examination of the cardinal monuments of Greek epigraphy leads to two conclusions. It is manifest, in the first place, that the dated Ionian inscriptions, namely those from Abu Simbel, Miletus, and Halicarnassus, arrange themselves in an orderly

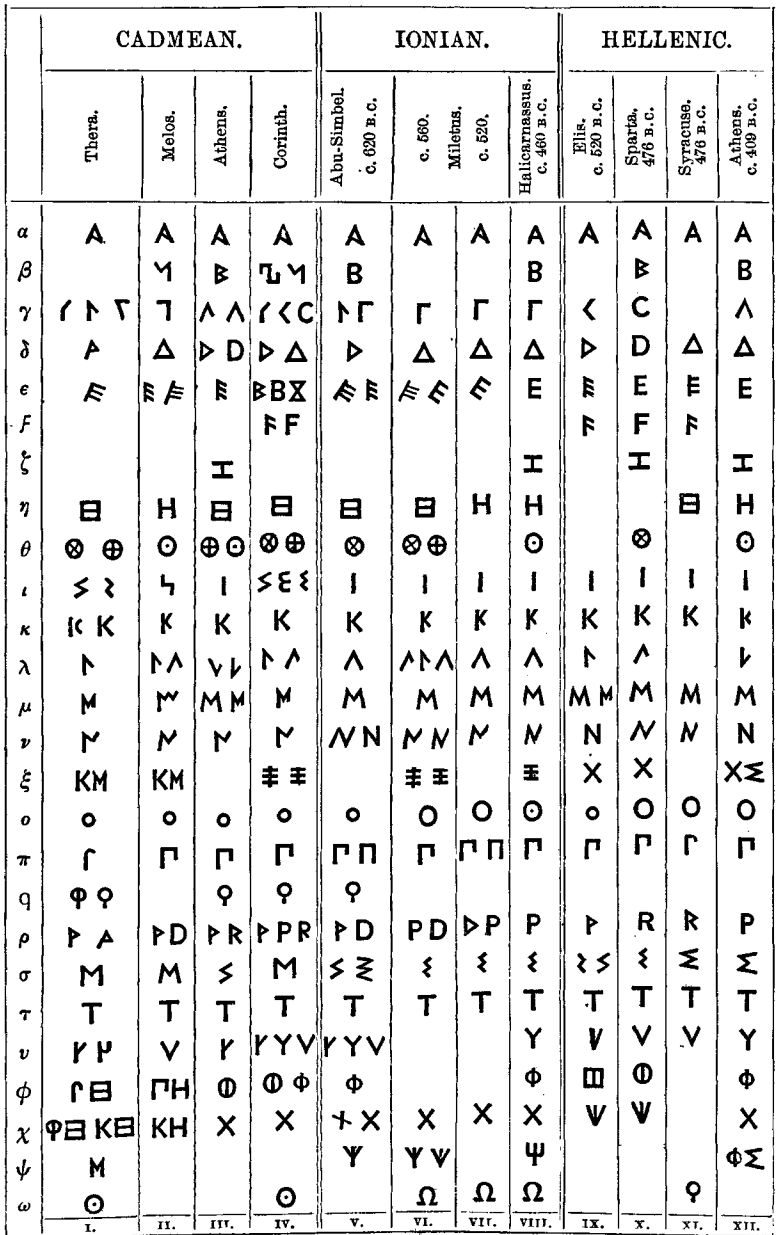
[1] The old Attic alphabet in its final form, as shown in the Potidæan and Erechthean inscriptions, is given in col. xii. of the Table on p. 59.

sequence of chronological development, and lead up to the standard Greek alphabet. It is also plain that the non-Ionian inscriptions find no place in any such sequence. They evidently belong to a separate alphabetic type, in many respects the more archaic of the two, and which, though displaced in Hellas, survived in the alphabet of Italy, and thus became the parent of the existing alphabets of Western Europe.

In addition to those cardinal monuments which have been described, there are a vast number of inscriptions from all parts of Greece, which, though undated, are plainly later than the Abu Simbel records, but earlier than the time when the Ionian alphabet was adopted throughout Greece. They may therefore be assigned to the 6th and 5th centuries B.C. They have been fully discussed by Kirchhoff, to whose book the student must be referred. The results of his exhaustive discussion of the local alphabets of this period may, however, be conveniently exhibited in a tabular form.

The first table exhibits the chronological development of the Greek alphabet, from the earliest times down to the close of the 5th century. The first four columns give the primitive alphabets of Greece, derived from monuments which, though undated, are admittedly older than the 6th century B.C. In the next four columns the development of the Eastern alphabet is shown by means of the dated monuments which form the corner-stones of the structure of Greek epigraphy.

CHRONOLOGICAL DEVELOPMENT OF GREEK ALPHABET.



GEOGRAPHICAL DISTRIBUTION OF GREEK ALPHABETS.

The three last columns contain the dated alphabets belonging to the Western type.[1] The second table exhibits the geographical distribution of the principal alphabetic types which prevailed during the two centuries of transition, between the 45th and the 95th Olympiads. The succeeding section will be devoted to an attempt to classify these local alphabets.

§ 6. CLASSIFICATION OF THE GREEK ALPHABETS.

The selected monuments discussed in the preceding pages may suffice to show that the classification of the Greek alphabets cannot be effected by means of any single method of arrangement. The principle of geographical distribution must be used in combination with that of chronological evolution.

Chronologically there are three epochs. In the first we have a primitive alphabet of the Phœnician type, which may be conveniently designated as the 'Cadmean.' The second epoch is marked by the rise of numerous local varieties, the germs of which can be detected even in the oldest monuments. New letters were evolved, old letters fell into disuse, forms were

[1] In this Table, for convenience of comparison, letters from the retrograde and boustrophedon inscriptions have been turned round. The principal points to which the attention of the student should be directed have already been noted. The references are, Inscriptions of Thera, p. 30; Melos, p. 37; Athens, p. 35; Corinth, p. 42; Abu Simbel, pp. 11 to 17; Miletus, p. 45; Halicarnassus, p. 48; Elis, p. 54; Sparta, p. 50; Syracuse, p. 53; Athens, p. 56.

simplified, and phonetic powers changed. During this second period, which may be designated as the Epoch of Transition, the confusion is great; the alphabet of almost every island, state, or city, being distinguished by local peculiarities. The epoch of transition began in the 7th century, and lasted to the close of the 5th. The third epoch, which dates from the year 400, B.C., witnessed the emergence of the two classical alphabets of European culture; the Italic, which became the parent of the modern alphabets of Western Europe; and the Ionian, which was the source of the Romaic, Coptic, Slavonic, and other eastern scripts.

These evolutions were largely determined by commercial, political, and social conditions. Civilization and centralization counteract the tendency to multiply dialects and alphabets. Through the wide extension of Phœnician commerce a nearly uniform alphabet was first transmitted to the semi-barbarous tribes of Greece. After the Phœnicians had been driven out of the Ægean, the isolation, the jealousies, and the commercial rivalries of the petty Hellenic states made possible, for a time, the growth and co-existence of numerous scripts. Finally, the common effort to repel the Persian invasion, followed by the rise of the Athenian empire, led to a perception of Hellenic unity and to the beginnings of a national existence, thus preparing the way for the extinction of local peculiarities and the ultimate adoption throughout Hellas of a single alphabetic type. A common government,

a common history, and a common law require a common language and a common alphabet. Just as Islam, introducing uniformity in religion, law, literature, and government, spread the local dialect and alphabet of Mecca from Samarkhand to Seville, so the Macedonian conquest carried the language of Athens and the alphabet of Ionia over a great part of Asia; and Rome, in like manner, effectually stamped out the local idioms and scripts of the subject nations throughout the West.

The alphabets of the first and third epochs present no great perplexities, as they are comparatively definite and uniform. The real difficulty arises when we come to deal with the multitudinous alphabets of the three centuries of transition, during which the primitive writing was being gradually transformed and remodelled into the classical alphabets of Italy and of Greece.

By a laborious analysis of the inscriptions of this epoch, Kirchhoff has catalogued and determined as many as forty local alphabets. In attempting their further classification the first step must be to group them into a few leading divisions. The forty local types are thus reducible to about half a dozen generic groups, each of which is characterized by certain common features, and also, as a rule, either by local proximity or by political connection.

The typical alphabets, as obtained from inscriptions of the 6th and 5th centuries, are tabulated on p. 60.

They may be grouped as follows :—

I. The IONIAN; consisting of the local alphabets of Miletus, Ephesus, Halicarnassus, Samos, Teos, and the colonies of these states on the shores of Thrace, the Propontis, and the Euxine.

II. The ÆGEAN; comprising the alphabets of the islands of Thera, Melos, Siphnos, Paros, Naxos, Ceos, and Thasos.[1]

III. The CORINTHIAN; which contains the alphabets of Corinth, Megara, Ægina, and their colonies, namely Corcyra, Anactorium, and Leucas in Western Greece, with Syracuse, Selinus, Gela and Agrigentum on the southern coast of Sicily.

IV. The ARGIVE.

V. The ATTIC.

VI. The EUBŒAN; comprising the alphabets of Thebes, Orchomenos, Tanagra, and Platææ in Bœotia, and of Chalcis, Eretria, Styra, and other cities in Eubœa, together with those of the numerous Chalcidian colonies in Sicily, Magna Græcia, and Campania, of which Catana, Himera, Messana, Naxos, Leontini, Rhegium, Neapolis, and Cumæ are the most important.

VII. The PELOPONNESIAN; including the alphabets of Elis, Sparta, Arcadia, and Achæa, as well as of Croton, Siris, Poseidonia, and the other Peloponnesian colonies in Italy.

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[1] The very archaic alphabet of Crete is intermediate between the alphabets of Thera and of Corinth.

The further arrangement of these groups has been much debated, almost every successive writer having brought forward a scheme of his own.[1] These classifications are mainly empirical, and it may perhaps be doubted whether the time has arrived for a really scientific arrangement, which must be based on the actual facts of evolution, so as to exhibit the historical affiliations of the various types. As a preparation for such a scheme it will be convenient to compare the 6th century forms of the test letters in the several groups.[2]

[1] According to the system of Franz there were three Greek alphabets, (1) the Ionian, (2) the Attic, (3) the Æolo-Dorian.

Mommsen's classification is essentially chronological. He distinguishes two successive alphabets, (1) a Primitive alphabet, of which (*a*) the Ionian and (*b*) the Attic were varieties. (2) A Secondary alphabet, which has two divisions, (*c*) the Corcyrean and (*d*) the Doro-Chalcidian. He considers (*e*) the Argive, and (*f*) the Æolo-Arcadian as derived from combinations of his Primitive and Secondary alphabets.

Kirchhoff also makes two main alphabets, but his arrangement is fundamentally geographical. He distinguishes (1) the Eastern alphabet, which he arranges in three divisions, (*a*) Asia Minor, (*b*) the Islands, (*c*) the Mainland of Hellas; (2) the Western alphabet, which he divides into two divisions, (*d*) the Mainland of Greece, (*e*) the Western Colonies.

Lenormant adheres essentially to the classification of Franz. He considers that the primitive Cadmean alphabet branched into four, (1) the Ionian, (2) the alphabet of the Isles, (3) the Attic, (4) the Æolo-Dorian, which has two subdivisions (*a*) the Corinthian, (*b*) the Argive.

[2] In this Table, only the normal forms in each group are inserted. The more complete Table on p. 60 includes a few exceptional or intrusive forms.

	ch	*x*	*F*	*q*	H	*ō*	*ps*	*l*	*d*	*s*
I. Ionian . .	Χ	Ξ	...	...	*ē*	Ω	Ψ	Λ	Δ	Ϛ
II. Ægean . .	Χ	...	...	...	*ē, h*	...	...	ʌ	Δ	MϚϚ
III. Corinthian .	Χ	Ξ	F	Ϙ	*h*	...	...	ʌ Λ	Δ	M
IV. Argive . .	Χ	Ш	F	Ϙ	*h*	...	...	⊦	D	M
V. Attic . . .	Χ	...	...	Ϙ	*h*	...	...	⊦	D	Ϛ
VI. Eubœan . .	Ψ	⊹	F	Ϙ	*h*	...	...	⊦	▷	Ϛ
VII. Peloponnesian	Ψ	Χ	F	Ϙ	*h*	...	...	ʌ Λ	▷	ϚϚ

This Table suggests a few obvious remarks. The Ionian alphabet, of which the Ægean may be regarded as a less developed form, departed most widely from the Phœnician type. It lost three of the primitive letters, *vau*, *koppa*, and *san*, while two new vowels *η* and *ω*, and a new consonant, *ψ*, were added to the letters employed elsewhere. It is easy to understand why alphabetic development should have been retarded in the isolated islands of the Ægean, and also should have been more rapid and complete among the cultured inhabitants of the wealthy commercial cities on the Ionian coast, than among the conservative Dorians, a ruder race of highlanders and agriculturists.

The Eubœan alphabet differs more radically from the Ionian type. It has special forms for *lambda* and *xi*, and represents *chi* by a symbol of independent origin, obtained from *koppa*, a letter disused by the

Ionians. The Eubœan cannot, like the Ægean, be regarded merely as an archaic form of the Ionian alphabet; it apparently represents a separate type of great antiquity. This need be no matter for surprise. When, in the 10th century, the Phœnician merchants had retired from the Ægean, the cities of Chalcis in Eubœa and of Miletus in Ionia were left to contend for commercial and colonial supremacy. The struggle may be not inaptly paralleled by the mediæval rivalries in the Levant of the Italian republics of Venice and Genoa. Chalcis, which was the first to rise to greatness, occupied Thrace and Italy, while Miletus took possession of the Euxine. Hence to the commercial enterprise of the 9th and 8th centuries B.C. we may trace the fact that the modern scripts of Western Europe belong to the Chalcidian type of the Greek alphabet, while those of Eastern Europe are Ionian.

The Corinthian is a very distinct and archaic alphabet, but belonging fundamentally to the Ionian rather than to the Eubœan type. The remaining alphabets, the Argive, the Attic, and the Peloponnesian are of an intermediate character.[1]

The Greek alphabets may thus be reduced to three

[1] Thus Athens has the Eubœan *lambda* but the Corinthian *chi*. Argos naturally approaches nearer to the Corinthian forms than Athens. The Peloponnese has the Eubœan *chi* and *xi*, with the Corinthian *lambda*. The epigraphic evidence proves that the divergence in the forms of *lambda* dates from an earlier period than the evolution of *chi*. Possibly in Argos and Attica an alphabet funda-

primitive types, the Corinthian, the Eubœan, and the Ionian,[1] which correspond to the three chief centres of Semitic influence. The origin of the Corinthian alphabet may be referred to the Phœnician colony at Corinth. The Eubœan or Bœotian alphabet may have originated in the rival Phœnician colony at Thebes, while the Ionian or Ægean alphabet may be traced to the Phœnician trading posts in the islands of Thera, Melos, Rhodes, or Samos. The Aramean names may either have been introduced into the Ionian alphabet from Pamphylia, or they may have come from Sardis to Chalcis together with the Euboic metrical standards.[2]

The Greek alphabet of the third epoch was obtained, not by a fusion of local types, but by the survival of the fittest and the extinction of the rest. At the close of the Peloponnesian war there were practically only three Greek alphabets, the Dorian or Spartan, the

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mentally Eubœan was modified by Corinthian influences, while in the Peloponnese a primitive Corinthian or Achæan alphabet was assimilated to the Eubœan.

[1] This result practically agrees with the classification of Franz, who, more than forty years ago, empirically divided the Greek alphabets into three primitive types, the Ionian, the Attic, and the Æolo-Dorian.

[2] The name of *koppa* has the Aramean form while *san* has not. Now since *san* is the only letter absent from both the Chalcidian and Ionian alphabets we may infer that it was through one of these alphabets that the Aramean names were transmitted. But the Aramean name of *koppa*, a Chalcidian letter not found in the Ionian alphabet, indicates that an independent Aramean influence affected the Chalcidian alphabet.

Attic, and the Ionian. After the expulsion of the thirty Tyrants and the return of Thucydides and the other exiles from Ionia, the Athenians, by a decree passed under the archonship of Euclid (Ol. 94, 2) ordained that the old Attic alphabet should be replaced in all public documents by the Ionian, which was already in literary use in many parts of Hellas. Archinus had introduced it into Bœotia; it is employed in an Argive decree dated fourteen years before the archonship of Euclid, and in an inscription from Orchomenos, which is anterior to the close of the Peloponnesian war. Probably the formal adoption of the Ionian alphabet at Athens only gave the finishing stroke to a movement which had been for some time in progress. Athens, though vanquished in war, was still supreme in literature and the arts, and her example was rapidly followed by the neighbouring states, so that in about fifteen years after the Euclidian decree the use of the Ionian alphabet became general throughout Hellas.

It was much the same in Italy, where local alphabets, Etruscan, Umbrian, Oscan, Messapian, and Faliscan, survived till the time of the empire, when they were replaced by the alphabet of Rome.

§ 7. THE ABECEDARIA.

The Greeks supposed that their alphabet originally consisted of sixteen letters, brought from Tyre by

Cadmus, to which four θ, φ, χ, ξ, were added by Palamedes, a hero of the Trojan war, while four, ζ, η, ψ, ω, were invented by the poets Epicharmus and Simonides of Ceos (c. 556–467, B.C.). This legend,[1] apparently arising out of phonological speculations, is plainly valueless, since *upsilon*, a non-Phœnician letter, is attributed to Cadmus, the obsolete letters *vau*, *koppa*, and *san* being unaccounted for, while of the characters attributed to Palamedes[2] two, θ and ξ, are Phœnician, and two, φ and χ, being later than the inscriptions of Thera, must be long posterior to the Dorian conquest. Nor can the additions assigned to Simonides be reconciled with the epigraphic evidence, ζ and η being of Phœnician origin, while ψ appears at Abu Simbel towards the end of the 7th century. It is, however, not improbable that the poems of Simonides may have helped to familiarize the Athenians with the Ionian letters η, ψ, ω.

It is not difficult to construct a more correct account of the relations of the Greek to the Phœnician alphabet, and of the nature and sequence of the changes which took place.

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[1] Pliny, *N.H.*, vii., § 56. Diodorus Siculus, Stesichorus, Euripides, Suidas, and other writers have preserved variant forms of the legend, which is fully discussed by Lenormant, in Daremberg and Saglio's *Dictionnaire*, vol. i., p. 206.

[2] The very name of Palamedes, 'the crafty,' is of the same legendary order as those of Myles, Pyrodes, and Closter, to whom the invention of the mill, the tinder box, and the spindle, were respectively ascribed.

There were, as we have seen, numerous local Hellenic alphabets, in some of which the amount of innovation was greater than in others. The Ionian, which became the standard alphabet of Greece, exhibits the maximum of change. Three of the twenty-two Phœnician letters, *vau*, *koppa*, and *san*, proving superfluous, fell into disuse, while five new characters, one by one, make their appearance in the records. The Eubœan and Peloponnesian alphabets, on the other hand, were more conservative, all the twenty-two Phœnician letters being retained, while only three additional letters were introduced.[1]

Hence there is a kernel of truth in the legend which designated certain letters as later additions to the primitive alphabet. The new letters added by the Greeks are the five which come at the end of the alphabet after τ, and these are proved by the epigraphic evidence to have been added in the order in which they stand, υ, φ, χ, ψ, ω. Their alphabetic position is due to the employment of the letters as numerals, which made it needful not to disturb the old alphabetic order. For the same reason *vau* and *koppa*, though disused as phonetic symbols, retained their stations in the alphabet as numerals. No better proof could be desired of the fact that no formal reconstruction of the

[1] In the Ægean alphabet there are 18 Phœnician letters out of 21; in the Attic 20 out of 23; in the Phrygian 17 out of 19; in the Lycian 17 out of 28; in the Umbrian 16 out of 18; in the Etruscan 16 out of 20; in the Oscan 16 out of 17; in the Latin 20 out of 23.

alphabet took place, but that the changes were gradually effected by a process of insensible evolution. The history of these changes has to be spelt out, inductively, from the scanty epigraphic record of the earlier periods, with the aid of such analogies as may be furnished by similar developments in other alphabets.[1]

In the endeavour to trace the history of the individual letters, the old have to be separated from the new. The normal retention by the Greeks of the primitive alphabetic order, vouched for by the transmission of the numerical values of the characters, together with the correspondence of the names, forms, and phonetic powers, renders easy the identification of the Greek letters with their Phœnician prototypes. Such obscurities as remain can be cleared up by means

[1] In our own alphabet, for instance, the great abundance of epigraphic material makes it easy to trace the exact steps by which the two characters I and J were slowly differentiated out of one primitive symbol, U and V out of another, and then specialized by natural selection so as to denote the vocalic and consonantal sounds. The process is instructive, throwing considerable light on parallel developments in the Greek alphabet. As a mere matter of graphic convenience the signs V and U began to vary till, in the 10th century, the form V came to be used by preference as the initial and U as the medial letter. Similarly, in the 15th century, I was lengthened and turned to the left at the beginning of words, as a sort of ornamental initial. The consonantal sound usually occurring at the beginning, and the vocalic in the middle of words, the two initial forms V and J at last became conveniently but undesignedly specialized to denote the consonants, and the two medial forms U and I to represent the vowels.

of abecedaria, Oscan, Etruscan, Greek, and Latin, which, owing to a series of fortunate chances, have been preserved in Italy. Several are alphabets, more or less complete, scribbled, apparently by schoolboys, on Pompeian walls. Of these, six are Greek, four are Oscan, and four Latin. Others are scratched on children's cups, which were buried with them in their graves; and others seem to have been cut or painted by artificers, apparently for practice in the graphic art, on unused portions of slabs containing mortuary records.

The graffiti of Pompeii, although dating only from the 1st century, A.D., supply the oldest complete abecedaria of the classical Greek and Latin alphabets. Much more ancient are some of the alphabets scratched on ink-bottles, bowls, and drinking-cups. Of these, five are Etruscan, and three exhibit early forms of the western type of the Greek alphabet.

At the beginning of the present year (1882) a plain vase of black ware, in the shape of an amphora, and about 6½ inches in height, was discovered in a tomb opened at Formello, near Veii, by Prince Chigi. It bears an Etruscan inscription of ownership, legibly scratched with a point, together with a syllabary or spelling exercise, as well as the Greek alphabet twice repeated. These two alphabets are of unique interest, as they contain archaic forms of every one of the twenty-two primitive Phœnician letters, arranged precisely in the order in which they stand in the Semitic

alphabet, while at the end, after *tau*, are added four additional signs of Greek origin.

THE FORMELLO ALPHABET.[1]

The letters are:—

α β γ δ ε ϝ ζ h θ ι κ λ μ ν ξ ο π ϡ q ρ σ τ υ x φ χ

The discovery of this little vase, by making possible the identification of each of the Greek letters with its Phœnician prototype, has finally settled a prolonged controversy as to the origin of certain letters. It places the sibilant **M**, which we call *san*, in the 18th station, thereby establishing its descent from *tsade*, and not from *shin* as hitherto supposed; while **Ξ**, which we call *sigma*, occupies the 21st station, and must therefore be connected with *shin*, and not, as its name suggests, with *samekh*, the 15th letter.

Before the discovery of the Formello vase the most complete abecedarium was one found (1836) at Cervetri, a small village about six miles from the coast, and nearly midway between Rome and Civita Vecchia. Cervetri preserves the name, and marks the site of Cære,[2] a

[1] The other alphabet on the vase is practically the same as that given above, but *pi* and *koppa* approach more closely to the usual forms, and the letters **E** and **F** have been interchanged, doubtless by mistake.

[2] The primitive name of Cære was Agylla, the 'round town,' which indicates that it was originally a Phœnician settlement. An ancient

primitive seat of Italic civilization, which has yielded painted tombs and sarcophagi more archaic in style than any that have been found elsewhere, some apparently, being of pre-Etruscan date. One of these ancient tombs contained a small cruet-like vase of plain black ware, 5½ inches in height, which is now in the Museo Gregoriano at Rome. It is usually called the Galassi vase, from the name of its former possessor. A Greek abecedarium is engraved round the base, while a syllabary is rudely scratched, with blunders and erasures, on the body of the vase. Few more curious relics have come down to us from the ancient world than this insignificant 'Pelasgic' ink-pot, which probably formed the alphabet and primer of a child, in whose tomb it must have lain for some five and twenty centuries.

THE CÆRE ALPHABET.

The syllabary, which has formed the subject of prolonged discussion, need not detain us. The abecedarium is not quite perfect or complete, two letters, *l* and *m*, being injured by an unfortunate fracture, and the letter *koppa* being omitted, probably by accident, as it appears in the syllabary. With these

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tradition, preserved by Dionysius of Halicarnassus, Strabo, and Pliny, affirmed that Agylla was a 'Pelasgian' city prior to the Etruscan conquest.

exceptions we have the Formello letters in the same order, and nearly in the same forms. The Cære abecedarium is of special value on account of its exhibiting the letter *san* in an archaic form ϻ, which occurs in no other epigraphic record, and is almost identical with the primitive outline of *tsade* which occupies the corresponding station in the Phœnician alphabet.

Both at Cære and at Formello the same four non-Phœnician characters Ϝ Χ Φ Ψ appear, and in the same order. The first is undoubtedly *upsilon*, and the third *phi*; but as to the others there has been considerable difference of opinion. In the Eastern alphabet Χ and Ψ represent *ch* and *ps*; in the Western they stand for *x* and *ch*. Now if Ψ denote *ps* the alphabet could only be the Ionian or standard Greek alphabet, but this it cannot be, not only on account of the absence of *omega*, but because of the presence of the letters *vau*, *koppa*, and *san*, which are absent from the Ionian alphabet. The sign Ψ must therefore denote *ch*, but in every alphabet in which this is the case Χ stands for *x*. Since then Χ = *x*, and Ψ = *ch*, the alphabet must be either the Peloponnesian or the Chalcidian (see p. 67), but since *l* is represented by ˪ and not by ˄ or Λ it can only be the latter.[1] But if Χ stands

[1] If any doubt remained it would be settled by the order in which the characters occur. The Greek alphabet of Cære indubitably represents the prototype of the other Italic alphabets, and the Latin and Etruscan abecedaria prove that in Italy the non-Phœnician

for *x* and not for *ch*, what are we to make of the strange character ⊞ which occupies the position held by *xi* in the Ionian alphabet? Since this character is not used in inscriptions, it was probably, like *vau* and *koppa* in the Eastern alphabet, an obsolete letter which retained its position in the alphabet solely as a numeral. Here we may be guided by analogy. The sixth Semitic letter, *vau*, was differentiated into two characters F (*w*) and Y (*u*), the first of which retained the old position while the other was relegated to the end of the alphabet. In the Western alphabets both signs retained their phonetic powers, but in the East F was disused as a letter, retaining its place only as a numeral. Much the same seems to have occurred with the fifteenth letter, *samekh* ⋿. In the East it retained its form, but changed its power from *s* to *x*, while in the West it seems to have been differentiated into ⊞ (*s*) and + (*x*), the first of which being needless, since the hard sibilant was already denoted by M and ≤, was retained in the old station as a numeral, while the new character +, representing the new sound, was removed to the end of the alphabet. That + or X was a derivative of ⋿, the fifteenth letter, appears also from a mutilated and corrupt abecedarium from Calabria[1] in which X seems to have occupied the

characters were arranged in the order Y X Φ Y, instead of Y Φ X Y as in Greece.

[1] This was found by Mommsen among the alleged Messapian inscriptions copied in 1805 by Cepolla in the neighbourhood of

position held by the Phœnician *samekh* and the Greek *xi*.

The Formello and Cære abecedaria represent practically the same alphabet, and hence they cannot be very remote from each other in their date. The direction of the writing, from left to right, the forms of the letters, the presence of the four non-Phœnician characters, and the retention of Phœnician letters afterwards disused, lead to the conclusion that these abecedaria cannot be earlier than the 7th century B.C. or later than the 6th. I should be inclined to name the middle of the 6th century as the date on the whole least open to objection.

So long ago as 1698 another syllabary and abecedarium, in the same alphabet, was found painted in large letters on the rock wall of an Etruscan tomb at Colle, near Sienna. Only the first sixteen letters

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Basta in Calabria. The transcript of Cepolla, who took it for an inscription, runs as follows :—

Λ B ⊦DFFI . H . KΛM
NOX . ϙ . PHϟ . TPΨΨ

The first letter is doubtless A, the fifth E, the seventh Ξ, and the three last ϝ Φ Ψ. On account of the notorious untrustworthiness of Cepolla's transcriptions a further conjectural restoration may perhaps be allowable, which would give a complete abecedarium as follows :—

ABΓDEFΞH[ΘI]KΛMNXO[Π]ϙPϡϟTYΦΨ

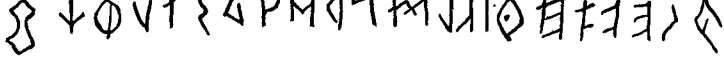
See Mommsen, *Die Unteritalischen Dialekten*, p. 49; Kirchhoff, *Studien*, p. 148.

could be deciphered, the rest having faded away. Below is a facsimile of the transcript taken at the time.

THE COLLE ALPHABET.

The Etruscan abecedaria exhibit an alphabet manifestly derived from the Italic form of the Greek alphabet. The best known was found in 1845 in a tomb at Bomarzo, near Viterbo, and is now in the collection of Prince Borghese. It is inscribed on the foot of a little vessel of ordinary ware which was probably the drinking-cup of a child. It contains the twenty letters of the standard Etruscan alphabet. The forms of the characters resemble those on the Cære ink-bottle, but the non-Etruscan letters **B D K O X** are omitted, and the Etruscan character **8** (*f*) is added at the end.

A similar cup is in the local museum at Grosseto. The letters, which are merely scratched on the clay, are the same as those on the Bomarzo cup, with the addition of **K** and **Q**, which do not properly belong to the Etruscan alphabet.



THE GROSSETO ALPHABET.

In the neighbouring museum at Chiusi there are two slabs of soft tufa, found in adjoining tombs, on which three Etruscan alphabets, somewhat imperfect

and illegible, are chiselled. They have apparently been cut by unskilful masons for practice in their art.

From Nola, near Naples, come two bowls inscribed with abecedaria in the Campanian or South Etruscan alphabet, which resembles somewhat the Oscan alphabet used in Pompeian graffiti.[1]

§ 8.—THE LETTERS.

A Semitic alphabet transmitted to a non-Semitic people would in some respects be redundant, in others defective. Unconscious adaptation would therefore inevitably ensue. The symbols of identical sounds might be transmitted without change, but superfluous

[1] The abecedaria have been the subjects of a copious literature, references to which will be mostly found in Fabretti, *Corpus Inscriptionum Italicarum*, No. 2403 for Cære, No. 450 for Colle, No. 2436 for Bomarzo, Nos. 2766 and 2767 for Nola, and 1st. Supp. Nos. 163 to 166 for Chiusi. See also Dennis, *Cities and Cemeteries of Etruria*, 2nd Edition, vol. i., pp. 172, 271, vol. ii., pp. 133, 224, 306. Mommsen, *Die Unteritalischen Dialekten*, pp. 5 to 8, and plate i; Müller's *Etrusker*, by Deecke, vol. ii., pp. 526 to 528; Kirchhoff, *Studien*, pp. 122 to 129; Wimmer, *Runeskriftens Oprindelse og Udvikling*, pp. 25 to 28; Garrucci, *Graffiti di Pompéi*, plate 1; Zangemeister, *C. I. L.*, plate 40; Ritschl, *Priscæ Lat. Mon.*, plate 17, and the convenient comparative tables of fifty-three ancient abecedaria in Fabretti's *Osservazioni Paleografiche*, *C. I. I.*, pp. 148 to 152. The Formello alphabet is engraved in the *Mélanges de l'Ecole Française de Rome*, vol. ii., plate 6. It has been discussed by Mommsen and Bréal in papers read before the *Instituto di Correspondenza Archeologica di Roma*, and the *Academie des Inscriptions* at Paris. Cf. *Academy*, April 15 and 29, 1882, and *Revue Critique*, April 4.

characters would either disappear or become the symbols of cognate sounds, and new letters would be evolved by differentiation.

In the Greek alphabet the Semitic semi-consonants and guttural breaths became vowels; aspirated mutes and additional vowels were evolved; and the sibilants underwent transformation. The remaining letters were improved in form, but otherwise correspond with tolerable exactitude to their Phœnician prototypes.

The process of evolution extended over several centuries. The most needful and obvious adaptations were the first to be effected, further changes following by degrees. The most urgent necessity was a notation for the vowels. Before the date of the oldest inscriptions this had been in great part attained, five out of the seven vowels appearing in the Thera epitaphs.

The Primitive Vowels.—The five primitive vowels were formed out of the Phœnician breaths and semi-consonants, letters which even in Semitic languages tend to lapse into the cognate vowel sounds. The three breaths, *aleph*, *he*, and *'ayin*, lent themselves readily to this process, losing altogether their character of gutturals, and sinking into the fundamental vowels, *alpha*, *e-psilon*, and *o-micron*.

The semi-consonant *yod*, which had the sound of the English *y* or the German *j*, lapsed easily into the cognate vowel sound of *iota*. Analogy would lead us to expect that *vau*, the other semi-consonant, would similarly weaken into the vowel *u*. The Greek *u-psilon*

does not, however, occupy the alphabetical position of the Phœnician *vau*, but comes among the new letters at the end of the alphabet.[1]

As to its origin, three theories have been advanced: the first deriving it from **O**, the second from **F**, and the third from **Y**, which represents *u* in the Cypriote syllabary.

The presumption is against the Cypriote hypothesis. If the origin of *upsilon* can be explained by the normal process of differentiation, to which the other new letters, φ, χ, and ω are due, it would be unscientific to refer it, without positive evidence, to an exceptional and conjectural source. Of the two remaining theories, the probabilities are in favour of a derivation from *vau*. No reason can be assigned why *vau* should be the sole exception to the law which evolved vowels out of those Phœnician letters which approached the vocalic character. The epigraphist will also attach weight to the minute size of the Phœnician **O**,[2] a characteristic faithfully reproduced in the *omicron* of early Greek inscriptions, whereas *upsilon* is as large as the adjacent letters. But putting such probabilities aside, the epigraphic evidence seems to be decisive. There are

[1] Its position as the first of the five new letters is an indication that it was the earliest addition to the primitive alphabet, an inference confirmed by the fact that it is the only one of the new letters which makes its appearance in the oldest inscriptions from Thera.

[2] The open forms of *'ayin*, which have been adduced as prototypes of **V**, are mostly Aramean, and of comparatively late date.

two early types of *upsilon*, V and Y. If the character arose by opening the loop of O, then V would be the primitive, and Y only a secondary form. But if the source was *vau*, a letter of which the tail is the most conspicuous feature, then a tailed form would be the oldest. Reference to the Thera inscriptions [1] proves that the earliest form was ϒ, which approximates to ϝ, and might easily develope into either Y or V.

Hence, though the characters F and V are apparently so unlike, the differentiation, morphologic as well as phonetic, can be readily explained. Assuming, as we are entitled to do,[2] that in the primitive alphabet F represented *w* lapsing into *u*,[3] the character F, assimilated in form to the contiguous letter E, would naturally retain the original station and the primitive consonantal sound, while ϒ, specialized to denote the cognate vowel sound, would be relegated to the end of the alphabet, so as not to disturb the accepted notation for the numerals.

In the Eastern alphabet F became obsolete as a letter before the date of the oldest inscriptions, though,

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[1] See pp. 30 and 35.

[2] The early Semitic forms of *vau* (see vol. i., pp. 99, 227, 213, 208, 243) would yield F almost as readily as Y. The Baal Lebanon *vau* is nearer to F, the Moabite to Y, while the Siloam inscription exhibits an ancient form, from which either could be obtained with almost equal ease.

[3] The sounds are closely allied, *w* being the consonantal *u*, and *u* being simply *w* vocalized by a slight widening of the lip passage.

as Bentley proved, it was in use at the time when most of the Homeric poems were composed. It retained, however, its alphabetic position, serving as the numeral for 6. The later lapidary form Ϛ seems to have been the source of the cursive numeral ϛ, which in minuscule scripts is assimilated to ϛ and ϛ, and other forms of the ligature for στ, called the stigma or stau.

In the Western alphabets Ϝ continued to be used as a letter. In Peloponnesian inscriptions it is found up to the close of the 5th century, being employed both in the Elean treaty and on the Platæan trophy. Through the Chalcidian alphabet it was transmitted to Italy, occupying the sixth station in the abecedaria, and acquiring in Latin the power of *f*, instead of *w* which it possessed in Greek.[1]

The Greek name of the letter Ϝ was originally Ϝαῦ, but from a fancied resemblance to a doubled *gamma* it was called by the grammarians, somewhat absurdly, the *digamma*. The name ψιλὸν ὖ, meaning "bare vau" or "mere *u*," is also due to the grammarians, the earlier name, as we learn from a fragment of the "Gram-

[1] The sound of our *w*, which was denoted in Greek by Ϝ, was retained in Latin by V. The sound of *v*, which is the dental equivalent of the guttural *w*, seems to have been wanting in Greek and Latin, as in many other languages. If the Latin V had been pronounced as *v* its name would have been *ev*, as in the case of *ef* and the other continuants. The name *ve* shows that it was a stopped consonant, and hence the sound must have been *w*.

matical Tragedy" of Callias,[1] having been ὗ, evidently an abraded form of ϝαῦ.

Eta. Since the evolution of *eta* comes within the period covered by the epigraphic record, the mode in which it was effected is a matter of evidence, and not of mere inference as in the case of *upsilon.*

The Latin **H** and the Greek *eta* are identical in form and in alphabetic position, though not in value. They occupy the station of *cheth*, the eighth Phœnician letter, which was a hard continuous guttural, like *ch* in the Scotch *loch* or the German *lachen.* In Greek this difficult sound readily weakened into the rough breathing *h*, thus forming a substitute for *he*, the fifth Phœnician letter, which had lost its aspiration, and had lapsed into the vowel **E**, originally called εἶ, and afterwards ἒ ψιλόν.

The history of *eta* begins with the inscriptions of Thera. In the oldest of them it retains the Phœnician form **Β**, with the value of the aspirate only, as in No. 2, **ΚΡΙΤΟΠΗΥΛΟ** (*κριτοφύλου*), ē being denoted by **E**, as in No. 6, **ΡΕΚΣΑΝΟΡ** (*Ρηξάνωρ*). In later inscriptions, such as No. 8, **ΟΡΘΟΚΛΗΣ** (*Ὀρθοκλῆς*), it stands for ē. At the beginning of the 6th century, when the Abu Simbel records were written, **Β** is still closed, and is used normally for ē, and permissively for *h.*

Polyphonic characters tend towards specialization. In the Western alphabets **H** was appropriated as the

[1] Athenæus, x. § 79. Cf. Plato *Cratylus*, 393 D.

symbol of the aspirate, while in the East it came to be used exclusively as a vowel. A notation for the aspirate being required it was obtained in the usual way by morphological differentiation. Just as ⊟ was simplified into H, so ⊦, the symbol for the aspirate, was obtained from H by further curtailment. The process of formation can be conveniently traced on the coins of Heraclea, an Ionian colony in Lucania, which supply an instructive chronological series of legends, extending from the close of the 5th century B.C. to the beginning of the 3rd.

We have four successive types,—

(1)	HE	prior to 400 B.C.
(2)	HPAKΛEIΩN	400—350 B.C.
(3)	⊦HPAKΛHIΩN	350—300 B.C.
(4)	⊦HPAKΛEIΩN	after 300 B.C.

At first H is a mere guttural breath, E representing the long vowel *ē*. In the next stage H denotes the aspirated vowel *hē* (= English *hay*). The forms are then differentiated and the sounds specialized, giving ⊦ = *h*, and H = *ē*.

The character ⊦ easily passed through ⊥ to ʿ, which is the form of the rough breathing usual in minuscule MSS. Down to the 8th century the rough and smooth breathings are generally denoted by ⊦ and ⊣; in the 9th century the three forms ⊦ ⊥ ʿ are used for the rough breath, and ⊣ ⌋ ʾ for the smooth, after which time the square forms go out of use.[1]

[1] Whether, as usually asserted, the *spiritus lenis*, ⊣, represents the

Omega. With the evolution of *omega*, which took place nearly a century later than that of *eta*, the formation of the Greek alphabet was at last completed. At Abu Simbel, where *ĕ* and *ē* are already denoted by distinct symbols, the three sounds subsequently represented by **O**, **OV**, and **Ω**, are all expressed by the same character, **O**. It was derived from the Phœnician letter *'ayin*, and it was called *oṽ*,[1] the name *o micron* being afterwards bestowed by the grammarians to distinguish it from *o mega*, which at first went by the name *ὦ*.

Owing to the late development of *omega* its history can be more distinctly traced than that of any other letter, and it is instructive to note the tentative way in which it was brought about. In early Dorian inscriptions a difference is made in the size of the character, **O** and **o** denoting *ŏ* and *ō*. At Argos the corresponding symbols are **O** and **Θ**, while in Melos another device was adopted, and we have the two characters **C** and **O**. In other islands, Paros, Siphnos, and Thasos, the opening is at the bottom instead of at the side, **O** and **O** representing *ŏ* and *ō*. In Ionia the usage was reversed, **O** standing for the short, and **Ω** for the long vowel.

other half of **H**, or whether it is merely an assimilated sign, suggested by **Ⱶ**, is a doubtful point. In the older Greek MSS., the breathings, especially the smooth, are commonly omitted. In the most ancient of all, the Harris and Bankes Papyri, the breathings are added by a later hand. See Wattenbach, *Anleitung z. Gr. Pal.*, p. 27, as corrected by Mr. E. M. Thompson, *Cat. of MSS. in B. M.*, I. pp. 1, 6.

[1] The final *n* of *'ayin* would disappear in Greek, just as *nu* comes from *nun*.

The inscription on the pedestal of the statue of Chares at Branchidæ, of which a facsimile is given on p. 46, is the earliest dated example of the Ionian notation, which became universal on the final prevalence of the Ionian alphabet.[1]

The destruction of very early MSS. makes it impossible to trace the actual transition from the lapidary *omega*, Ω or Ω, to the uncial ω.[2] The numismatic Ⱳ, which is not uncommon on the coins of Thrace,[3] and the capital W of early MSS., though somewhat later than the uncial type, may however be regarded as survivals of the lost transitional form.

Phi. In Greek, as in Sanskrit, characters were needed to express the sound of the tenuis followed by an aspiration. In the Thera inscriptions of the first epoch

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[1] At Athens down to the archonship of Euclid (B.C. 403) both sounds are expressed by O.

[2] The common assertion, which is repeated by a writer so careful as Wattenbach, that the minuscule ω grew out of OO, cannot be admitted. Not to speak of the improbability of a minuscule letter having originated otherwise than from the majuscule character, the question seems to be settled by the chronological sequence of the forms, ꝏ being later than ω, and not earlier, as the theory demands.

[3] As on the coins of Perinthus and Mesymbria, struck in the reigns of Geta, Severus Alexander, Philip and Otacilia, 211—249 A.D. This form Ⱳ, which seems to be confined to Thrace, where many archaic types were conserved, may be regarded as a survival of the unknown prototype of ω, which occurs in inscriptions of Augustus, on coins of Nero, Trajan, and Hadrian, and in the Bankesian Homer.

the combinations ⊗H, ΠH, KH, denote the sounds for which the letters θ, φ, χ were subsequently used.[1] The development of *theta*, the oldest of these characters, has already been explained (p. 31). It is plain that the Phœnician *teth* (*ṭ*), which expressed a sound unknown in Greek, was appropriated at an early period as the symbol for *t'h*.[2] Out of this a character for *p'h* was next evolved. The possibility of such a development is explained by the well-known tendency to substitute for *th* the easier sound of *ph*.[3] The primitive symbol retained as usual the primitive alphabetic station and the primitive sound, while the differentiated character was removed to the end of the alphabet as the second of the new letters.

The oldest form of *phi*, which is ⊘,[4] is an

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[1] It is believed that these letters were not originally continuous consonants, like *th* and *f* in English and *ch* in German, but represented the complete tenuis followed by a distinct aspiration, like the aspirated mutes in Sanskrit, or like *kh*, *ph*, and *th* in the words inkhorn, uphill, and boathouse.

[2] Compare the Thera inscriptions, No. 4 and No. 8 on pp. 31, 33.

[3] Children often use the easier sound instead of the more difficult, saying bof, erf, fink, for both, earth, and think. The Russians change Theodore into Feodor. The same tendency shows itself in Greek, where we have the dialectic form φήρ for θήρ, and Homer uses φλίψεται for θλίψεται. So again we find a primitive *th* represented by *f* in Latin and by θ in Greek. Compare *fumus* and θυμός, *fingo* and θιγγάνω, *rufus* and ἐρυθ-ρός, *fe-mina* and θῆ-λυς.

[4] As on the earliest coins of Pharæ.—Head, *Coinage of Bœotia*, pp. 15, 16. The usage at first was tentative, as in the case of *omega*. In an inscription from Naxos we find Φ = *th* in the name

indication that the new letter originated in the usual way out of a simplification of the parent character ⊗. At Abu Simbel we find ⊗ and ⊕ used for *th* and *ph*. After the disuse of *koppa* other forms became available, and we get ϙ, ϙ, ϕ, ϕ, and Φ. At the beginning of the 5th century ⊗ was replaced by Θ as the lapidary *theta*, but in the oldest existing MSS., such as the Bankesian Iliad, and the Herculaneum rolls, the final form Θ already appears.

The reader will not fail to observe that the epigraphic history of the formation of *θ* and *φ* out of *teth* illustrates and confirms the explanation which has been given of the parallel development of *F* and *υ* out of *vau*.

Chi. The Greeks, as we have seen, appropriated the Phœnician *tau* and *teth* as the symbols of *t* and *t'h*. The letters *kaph* and *qoph* could not be similarly specialized to denote *k* and *k'h* on account of the prolonged retention of *koppa* as well as *kappa* in the early alphabet. Hence a notation for *k'h* had to be obtained by differentiation. Two distinct symbols for this sound were evolved, Χ in the East, and ↓ in the West. The source of these two characters is indicated by the two notations, ΚΗ and ΦΗ, by which the sound of *chi* is expressed in the inscriptions of Thera.[1] The parent characters Κ and Φ were differentiated to avoid con-

Δωροθέα. Kirchhoff, *Studien*, p. 77. The Sigean inscription indicates that *phi* originated, as might be expected, in an Æolic region.

[1] See Nos. 4 and 6 on pp. 31, 33.

fusion, and instead of KH or K[1] we find the characters[2] Κ ϟ Χ + employed in the Eastern alphabet, while in the West the loop of Φ is opened so as to give the successive forms Υ Ψ ↓.

Psi. The last new consonant to be evolved was the symbol Υ, representing *ps*, which is confined to the Ionian alphabet. In early inscriptions this sound is expressed either by ΓΣ or ΦΣ. Just as the primitive notation ΦΒ for *kh* suggests the derivation of the Western symbol Υ = *kh* from Φ = *q*, so the notation ΦΣ for *ps* leads to the conjecture[3] that the Eastern symbol Υ = *ps* was obtained from Φ = *ph*.

Xi. The most obvious test distinguishing the Eastern and Western alphabets is the symbol for *ks*. In the East it is Ξ, in the West Χ. The source of the Eastern

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[1] *Chi* is denoted by a character indistinguishable from Κ in the oldest inscriptions of Crete. See Kirchhoff, *Studien*, p. 63.

[2] See Rose, *Inscr. Gr. Vet.*, plate 4, fig. 2 (Agrigentine Vase), and the lower Sigean inscription for examples of the transition forms.

[3] The origin of *psi* has been much disputed. It is contrary to analogy and probability to suppose, as is usually done, that the Ionians appropriated the Dorian character Υ = *kh*, and arbitrarily assigned to it the wholly unconnected value of *ps*. Insuperable difficulties, chronological, geographical, and phonological, forbid the supposition that *psi* was obtained from Ψ, a Sidonian form of *shin* of comparatively late date. It is hardly less difficult to refer it to the characters Ψ, Υ, or Ψ, which appear in the scripts of Pamphylia, Caria, and Cilicia, and also in the Cypriote syllabary, with the values *ss* or *se*. I venture to think that the source suggested in the text is more probable, since it conforms to the analogies supplied by other additions to the Greek alphabet.

form is manifest. In early inscriptions[1] the fifteenth Greek letter *xi*, ǂ, is identical in form with the fifteenth Phœnician letter *samekh*.[2] The origin of the Western character, X, is more doubtful. On the grounds of identity of form, and of the use, in some early inscriptions, of ΧΣ as well as ΚΣ for *x*, it has been supposed that the Latin letter X was obtained from the Greek *chi*. But throughout the regions where X = *x*, the character Y denotes *chi*, and *x* can hardly have been derived from a symbol locally unknown. It seems more probable that both characters for *x*, the Western as well as the Eastern, were obtained, as Franz contends, from *samekh*. The earlier form ǂ would yield + or X almost as readily as it yielded Ξ, while the evidence afforded by the abecedaria tends to identify X with the fifteenth Phœnician letter, and also accounts for its position at the end of the Latin and Chalcidian alphabets.[3]

So much confusion exists as to the new consonants

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[1] In inscriptions from Branchidæ of the 6th century the primitive form ǂ begins to pass into Ǆ, which, as well as Ξ, appears on coins bearing the name of Alexander the Great. From Ξ, which is found in the oldest MSS. (2nd century B.C.), arose the uncial forms $\overline{2}$ and Ƹ, from which the transition is easy to the minuscule ξ.

[2] The difficulty with regard to the names and powers will be presently discussed. See p. 97.

[3] See pp. 77, 78, *supra*. The interchange and equivalence of the forms X and Ξ on the 5th century coins of Naxos in Sicily supports the view that they were local variants from the earlier type.

that it may perhaps be permissible to repeat, in brief summary, the conclusions reached in the preceding pages. The Greek alphabets in which Ψ = *ps*, have Χ = *ch*. Those in which Ψ = *ch*, have Χ = *x*. These symbols, though identical in form, are independent in origin. Probably Ψ = *ps* comes from *phi*, Φ, while Ψ = *ch* comes from *koppa*, Ϙ. Again Χ = *ch* comes from *kappa*, Κ, while Χ = *x* comes from *xi*, Ξ. The common assertion that the characters Ψ and Χ of one alphabet were adopted in another as symbols of totally different sounds is contrary to sound scientific principle. It cannot be repeated too often that in palæographic, no less than in linguistic or zoologic science, the laws of evolution are supreme, leaving no room for arbitrary invention or intention.

San. The identification of the sibilants is the most difficult problem connected with the transmission of the Phœnician alphabet to the Greeks. There were four Semitic sibilants, the hard, *samekh;* the soft, *zayin;* the lingual, *tsade;* and the palatal, *shin*. The Greeks required only three, the hard, *sigma;* the dental, *zeta;* and the guttural, *xi*. There are, however, indications that the Greek alphabet originally possessed a fourth sibilant, which was ultimately lost. Its name, its form, and its alphabetic station can be recovered. We know its name from an allusion of Herodotus, its form from early inscriptions, and its place in the alphabet from the abecedaria. In attempting to identify the Greek sibilants with their Phœnician prototypes it is needful

to begin by restoring the lost letter to its place in the primitive alphabet.

In the 5th century B.C. the fourth sibilant still survived in dialectic use. Herodotus informs us (I. 139) that the names of the Persians "all end with the same letter—the letter which is called San by the Dorians and Sigma by the Ionians." At this time there was apparently no conspicuous distinction between the sounds represented by *san* and *sigma*,[1] but the survival of the two names indicates the existence of two primitive letters whose sounds had become assimilated.

Herodotus supplies no hint that these letters differed except in their names, but his statement as to a distinctive Dorian and Ionian usage makes it possible to discover and identify their respective forms. In early Greek inscriptions the hard sibilant is expressed by two distinct characters, one employed almost exclusively by Ionians, and the other by Dorians, but without any appreciable distinction in the phonetic values. In Dorian inscriptions, as at Thera, Crete, Corinth, and Argos, *s* is denoted by the symbol M, while in Ionian records, as at Miletus, Naxos, Samos, and Athens, it is expressed by ⟨, and afterwards by ⟨. Obviously

[1] We learn from Athenæus (xi. § 30) that in the time of Pindar, and even of Aristoxenes, a certain distinction in the sounds still existed, *sigma* being apparently the harder of the two. The Etruscans used both letters; ⟨ (*sigma*), employed preferentially as an initial and medial, representing a stronger sound than M (*san*), which is used chiefly as a final. Corssen, *Sprache der Etrusker*, I. pp. 14—16.

these must be the two characters corresponding to the two names. The Dorian character as well as the Dorian name went out of use, while the Ionian name and character survived. The Dorian character Ϻ is therefore to be identified with the Dorian name *san*.

This identification is confirmed by the name and form of the numeral *sampi*. After the new letters had been evolved, the Greek numeral notation went up to 800, and another sign being required to complete the scheme, the nearly obsolete letter *san* was revived and employed to denote 900. The modern name *sampi* (σαν+πι) seems to have been suggested by the resemblance to π of the 15th century form ϡ, which, however, can be connected with the primitive *san* by a series of intermediate types.[1] From the lapidary type, Ϻ, which is found in the inscriptions of Thera and Corinth, we get the numismatic type ϻ (*s*), found on coins struck at Mesymbria in Thrace from the 5th to the 2nd century B.C. This obviously supplies the transition[2] to the uncial type ϡ, which denotes 900 in a Greek papyrus of the 2nd century B.C., and from this is easily obtained the minuscule numeral ϡ which appears in a 9th century MS., and was the parent of the modern numeral ϡ.

The form of the character which went by the name of *san* having been determined, it has to be seen

[1] See Wattenbach, *Anleitung z. Gr. Pal.*, p. 24; Gardthausen, *Gr. Pal.*, p. 266; and *Cat. of B. M. Coins, Thrace*.

[2] Compare the evolution of the uncial ϻ (*m*) from the capital Ϻ.

whether it can be identified with any of the four Phœnician sibilants. Of the Semitic letters only one was wholly lost in the European alphabets.[1] In the Greek alphabet there is manifestly a lacuna in the place which was occupied by the eighteenth Phœnician letter. Up to this point the numerical powers of the Greek and Semitic letters correspond; after it they have been disarranged. The seventeenth letter, *p*, represents 80 in both alphabets; but the nineteenth, *q*, stands for 100 in the one, and for 90 in the other.[2] Plainly, the eighteenth Phœnician letter, a sibilant, which stood for 90, disappeared from the Greek alphabet, and may therefore be identified with *san*, the letter which the Greeks lost.

It is only a matter of inference that the one vacant place in the Greek alphabet was originally occupied by the one letter which we know to have been lost; but the ancient abecedaria from Italy afford positive evidence of the correctness of the surmise, the place next after *p*, which corresponds to the eighteenth station, being occupied by a character which, in the alphabets of Formello, Bomarzo, and Grosseto appears as M, and in the older Cære alphabet as M, which if turned round, W, so as to correspond with the direction of the

[1] The sixth and nineteenth Phœnician letters retained their places in Greece as the numerals *vau* and *koppa*, and in Italy as the letters F and Q.

[2] See the comparative tables of the Phœnician and Greek alphabets, vol. i. pp. 99, 75.

Semitic writing, exhibits a form which is nearly identical with that of the eighteenth Phœnician letter, 𐤑.

It may therefore be considered as certain that the name of the lost sibilant was *san*, that in the primitive Greek alphabet it occupied the eighteenth station, between *pi* and *koppa*, the successive forms being Μ Μ Π Π Ϻ Ϻ.

The Sibilants.—Comparing the places, forms, values, and names of the Greek and Phœnician sibilants, we obtain the following results :—

PHŒNICIAN.				GREEK.			
No. 7	𐤆	*z*	Zayin	No. 7	Ι	*sd*(*z*)	Zeta
„ 15	𐤎	*s*	Samekh	„ 15	Ξ	*ss*(*x*)	Xi
„ 18	𐤑	*ts*	Tsade	„ 18	Μ	*s'*	San
„ 21	𐤔	*sh*	Shin	„ 21	Σ	*s*	Sigma

It will be seen that the places of the four Semitic sibilants were also occupied by sibilants in the primitive Greek alphabet, that the forms of the characters have been transmitted with less than the ordinary amount of variation, whilst the phonetic powers can be easily deduced from those of the Semitic prototypes.[1]

[1] The Phœnician soft sibilant *z* became the Greek dental sibilant *ζ*, this being the nearest Greek sound. The forms *συρίσδω* for *συρίζω*, and *Ἀθήναζε* for *Ἀθήνας δε*, are held to prove that the Greek *ζ* had the power of *σδ* or *δς*. The Phœnician lingual sibilant 𐤑, *ts*, a sound peculiar to the Semites, became the hard sibilant *s* among

The seventh letter, *zeta*, has the form and place of *zayin;* the eighteenth, *san*, has the form and place of *tsade;* the fifteenth, *xi*, has the form and place of *samekh;* and the twenty-first, *sigma*, has the form and place of *shin*. Thus, although the forms and the alphabetic stations of the sibilants correspond, there is in every case a perplexing want of correspondence between the names. The Phœnician names, so far as they reappear in the Greek alphabet, are not appended to the corresponding characters.[1] The name

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the Dorians, while the palatal sibilant Ϣ, *sh*, which also represented a sound which the Greeks did not possess, was used for the hard sibilant among the Ionians. The Phœnician hard sibilant ס, *s*, denoted the Greek sound σσ, afterwards becoming the guttural sibilant ξ, as is indicated by the variants διξός and δισσός, τριξός and τρισσός, ἀνάξω and ἀνάσσω, Οἰλίξης and Ὀδυσσεύς, ξύν and σύν. The use of ξ is most frequent in Doric and old Attic. It is usually assumed that the difference was dialectic, but in some cases an easier explanation seems to be that in the more archaic alphabets the symbol Ξ retained its primitive power of *s* or *ss*.

[1] The name *samekh*, with the normal addition of the emphatic *aleph*, would become *samekha* or *samega*, and then *sigma* by metathesis of the labial and the guttural. The equivalence of the names *tsade* and *zeta* is explained by the similar changes of *yod* and *iota*, and *daleth* and *delta*. There is more difficulty in obtaining *san* from *zayin*, and it seems possible that *shin* might become *ssi* or *xi*, just as *nun* became *nu* by the disappearance of the final *n*. These identifications of the names are accepted by Dr. Aldis Wright, *Dict. of Bible*, III. p. 1797; and Mure, *Gr. Lit.*, I. p. 82. Otherwise we must derive *san*, which in Ionic would be σήν, from *shin*, and *zeta* from *zayin* by assonance with the contiguous names *eta* and *theta*, making *xi* a new name invented by the Greeks on the model of *phi* and *chi*, just as *phi* was itself formed on the model of *pi*.

sigma may confidently be identified with *samekh; zeta* probably with *tsade;* leaving *zayin* and *shin* as the prototypes of *san* and *xi*.

No satisfactory solution of the problem has hitherto been offered. The conjectures formerly advanced by eminent scholars,[1] and repeated by subsequent compilers, are now proved by the evidence of the abecedaria recently discovered to be no longer tenable. These elaborate explanations may, I venture to think,

[1] The explanations proposed by Gesenius, Lepsius, Böckh, Mommsen, Franz, Mure, and Lenormant are for the most part mutually destructive. The hypothesis usually accepted is to the following effect. Originally the 21st Greek letter was *san*, the name and form being obtained from *shin;* the 15th was *sigma*, derived from *samekh;* while *zeta* came from *zayin*. When *san* was disused *sigma* took the 21st station, leaving the 15th station vacant, which was filled by *xi*, a letter reborrowed from *samekh* with a new name. To any form of this hypothesis the epigraphic evidence seems fatal. In the abecedaria Σ (*sigma*) invariably occupies the 21st station and not the 15th, and M (*san*) the 18th instead of the 21st as the theory requires. *San* is therefore identified by its form and place with *tsade*, and not with *shin*. Nor can Σ be obtained from *samekh* as supposed. The zigzag prototype to which it is referred was a late Sidonian form (see vol. i. p. 227) evolved at a time when Phœnician influences in Greece had come to an end; while the older form of *samekh* to which *xi* is referred had disappeared from the Phœnician alphabet before place was made for it by the disuse of *san*. That the Greeks, remodelling their alphabet at a time long after the Phœnicians had finally retired from the Ægean, obtained from them the archaic form of a letter which had already been transmitted in a much later form, is an hypothesis which may well stagger M. Lenormant, who, however, accepts it "as a fact extraordinary but nevertheless certain."

be replaced by a very simple hypothesis. The whole difficulty will disappear if we assume that a confusion and exchange of names took place between the two dental sibilants, *zayin* and *tsade*, which represented approximate sounds, and also between the two open sibilants *samekh* and *shin*.[1]

To account for this interchange of names it is not necessary to suppose that it was effected intentionally or directly. It may be more easily explained as the result of the amalgamation of contiguous local alphabets, in which the primitive characters had acquired different powers.[2] The literature of the more cultured but less numerous people becoming known to the other race, they would employ the characters of the literary alphabet, designating them however by the familiar names of the characters expressing the same sounds in their own alphabet.[3] If, for instance, the *s* in one alphabet had been originally obtained from *samekh*, and in the other from *shin*, those who had

[1] Thus in Hebrew *tsade* weakens into *zayin*, and *samekh* interchanges dialectically with *shin*. Ewald, *Heb. Gram.*, p. 55.

[2] Thus the Latin C, transmitted to European alphabets, has come to denote such diverse sounds as *k* in Irish, *s* in English, *ts* in Polish, and *ch* in Italian.

[3] This has repeatedly occurred. The names of the ancient runes were transferred by the Goths to the Greek uncials introduced by Ulphilas, and the names of the Irish Oghams were given to the Latin uncials of equivalent value. In both cases a rude people, adopting a literary alphabet, transferred to the new characters the corresponding names with which they were familiar.

been accustomed to call the hard sibilant *sigma*[1] would continue to apply this name to the character which expressed the same sound in the supplanting alphabet.

That the difficulty as to the affiliation of the sibilants can be solved by some such hypothesis will hardly be denied, though how the changes were actually effected can only be a matter for conjecture.[2]

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[1] The possibility of such a confusion is proved by the fact that it has actually been committed by certain modern scholars, who have insisted that M, whose real name was *san*, ought to be designated by the name *sigma*, which belongs to the character Σ.

[2] To show that the actual changes can thus be explained, let it be assumed that there were three competing alphabets, say the Dorian, the Eubœan, and the Ionian. Suppose *zayin*, I, had come to denote *s'* in the Dorian alphabet, with the name *s'an*, and *z* in the Eubœan; while *tsade*, M, denoted *z* in Dorian with the name *zeta*, and *s'* in Eubœan. The Eubœan literature, with its vehicle the Eubœan alphabet, becoming known to the Dorians, they would retain for *z* their own name *zeta*, while adopting for it the Eubœan symbol I. Similarly they would take for *s'* its Eubœan symbol M, calling it by the Dorian name *s'an*. The same process would be repeated with the other sibilants; *samekh*, ⋿, becoming *s* in the Dorian alphabet with the name *sigma*, and *x* in the Eubœan, while *shin*, W, would be *x* in the Dorian alphabet with the name *xi*, and *s* in Eubœa. On the amalgamation of the alphabets the Dorians would use for *x* the Eubœan sign ⋿ with the Dorian name *xi*, and for *s* the Eubœan sign ≺ with the Dorian name *sigma*. The Dorians would thus have the signs ≺ and M for the approximate sounds *s* and *s'*, one of which, say ≺, would disappear. Their use as numerals would, however, cause the characters to retain their alphabetic stations, so that the resulting Dorian alphabet would have I, *z*, called *zeta*, for the 7th letter; ⋿, *x*, called *xi*, for the 15th; and M, *s'*, called *s'an*, for the 18th. A similar

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The changes which affected the remaining characters need not be discussed at any length, as they are merely morphologic, and do not interfere with the names, values, or alphabetic order of the letters.

Lambda. The forms assumed by this letter are of special value for purposes of classification. Only the Eubœan and Old Attic alphabets retained the earlier type, , which was normally replaced by or . The newer form, with the bars united at the top, is of great antiquity, having established itself before the Thera inscriptions were engraved, while the older type exhibits singular persistency, as is shown by its survival in the L of our own alphabet.

The transformations of this letter are noteworthy. The Phœnician character has been reversed in all the derived scripts, apparently on account of the inconvenience of a formation running counter to the direction of the writing. In scripts of Aramean origin, such as the Syriac, Arabic, and Pehlevi, the Phœnician has become by passing through the intermediate form , the lower stroke being turned backward on itself so as to facilitate a junction with the succeeding letter. In the Greek alphabets a similar result was obtained by a different process. The character ,

interchange taking place between the Eubœan and Ionian alphabets we should have, in the ultimate Ionian alphabet, , *z*, called *zeta*, for the 7th letter; , *x*, called *xi*, for the 15th; and , *s*, called *sigma*, for the 21st. The Dorian alphabet being finally replaced by the Ionian, *san* would disappear, leaving the sibilants of the resulting Greek alphabet precisely as we have them.

written from right to left, if reversed so as to correspond with the changed direction of the Greek writing, would give 𐤋 in scripts written from left to right. Instead of this, we get two leading types, 𐤋 in the Eubœan and Old Attic, and 𐤋 (afterwards ᐱ and Λ) in the Dorian and Ionian alphabets. How the change from 𐤋 to 𐤋 was effected is a question to which no answer has hitherto been given. The early inscriptions from Athens furnish the clue, indicating that the primitive form 𐤋 having been inclined, ✓, the relative length of the two strokes was altered[1] as a matter of graphic convenience, so as to give V, from which we easily obtain the normal 𐤋 and L of the Old Attic and Italic alphabets.

The early Argive and Samian[2] form 𐤋, succeeded by 𐤋, is valuable as exhibiting the genesis of the Corinthian forms 𐤋 and ᐱ, from which the transition is easy to the Ionian Λ and the subsequent minuscule λ.[3]

[1] The coins of Populonia, which exhibit an archaic type of the Chalcidian alphabet, afford good examples of the transitional form, the two strokes being of nearly equal length, V. Cf. pp. 35, 36, *supra*.

[2] Kirchhoff, *Studien*, p. 28; Böckh, *C. I. G.*, No. 6. This isolated Samian type was either due to Argive influence, or may be a survival from a still earlier period; Samos, whose Semitic name testifies to Phœnician colonization, lying at the outlet of the Chalcidian trade route with Lydia, and her metrical standard agreeing with that of Chalcis.—Head, *Coinage of Lydia*, p. 13.

[3] Thus we see that the longer vertical stroke of the Phœnician 𐤋 must be identified with the short horizontal bar in the Western L and l, and also with the shorter stroke of the Greek forms 𐤋 and 𐤋, and again with the longer stroke of λ.

Koppa. The archaic nature of the Latin alphabet is shown not only by the use of the older form of *lambda*, but by the retention of *vau* and *koppa*, F and Q, which kept their places in Greece only as the numeral signs for 6 and 90. *Koppa*, which preceded *o* just as the Latin Q precedes *u*, has been found in a few of the earliest Greek inscriptions,[1] but is more common as a numismatic than as a lapidary character.[2] The primitive type, ϙ, appears in one of the Formello alphabets, the other exhibiting the later form ϟ, which denotes 90 in the Codex Sinaiticus. In minuscule MSS. we have ϙ. The modern form ϟ, now usual in printed books, is hardly older than the 13th century.

Sigma. The Abu Simbel inscriptions retain the primitive form of *sigma*,[3] ϟ, which, with other archaisms, was transmitted through the Chalcidian alphabet to Italy, where it became S. In Greece, possibly to distinguish it from the angular *iota*, ϟ acquired a

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[1] It occurs twice at Thera and twice at Athens, and also at Argos, Paros, Abu Simbel (Rhodes), and Locris. See Kirchhoff, *Studien*, pp. 36, 69, 82, 136.

[2] It is found on the coins of Corinth, Coronea, Cos, Croton, and Syracuse. At Syracuse the transition from *koppa* to *kappa* dates from the reign of Gelon, 485—478 B.C.

[3] The priority of ϟ is shown by the fact that ϟ does not occur in any retrograde inscription, and only once in a boustrophedon inscription (*C. I. G.*, No. 39), while it is common in inscriptions written from left to right. On the other hand, ϟ is used in retrograde inscriptions, and in inscriptions written from left to right up to the 84th Olympiad, when it disappears.

fourth bar and became ⋹, and afterwards Σ, and ultimately gave place to the more symmetrical lapidary type Σ, which has not as yet been discovered in any MS. Out of the transitional form ⊏ arose the ordinary lunar form C, which appears on coins as early as the time of Pyrrhus,[1] and is universal in early MSS. The closed type ϲ only dates from about the 8th century A.D.

Zeta. The primitive Greek form, ⌶, which is identical with the Baal Lebanon *zayin*,[2] is found in both of the Formello abecedaria, and was the parent of the Etruscan ⌶. The usual lapidary and numismatic type, which exhibits great persistency and uniformity, is Ⅰ. The manuscript form Z is found in the oldest existing MSS. The letters *zeta* and *xi* have been affected by assimilation in their successive stages. The Cadmean forms are ⌶ and ⌶, the usual lapidary types are Ⅰ and ⋿, the uncials ⲍ and ⲝ, and the minuscules ζ and ξ. The Bomarzo *zeta* has however been assimilated to *sigma*.

Epsilon. The early form of *epsilon* is ⊱ at Corinth and Corcyra. Elsewhere we have the successive types ⋹, ⋹, ⋹, E. The subsequent crescent shape,

[1] It must, however, have been introduced somewhat earlier as a MS. form, as appears from a fragment of Æschrion, a pupil of Aristotle and contemporary of Alexander, who alludes to the new moon as τὸ καλὸν οὐρανοῦ νέον σῖγμα. Later writers call the orchestra the *sigma* of the theatre, and Martial applies the term to a semicircular couch.

[2] See vol. i. p. 215.

Ϲ, is first found in the 3rd century B.C., and may have arisen from assimilation to the lunar *sigma*, with which it is nearly contemporaneous.

Iota. Before the date of the oldest Greek inscriptions, the Phœnician *yod* 𐤉 had lost one bar and had become ɾ. The angles opened out, seemingly because of the inconvenient resemblance to *sigma*, giving ι, through which the subsequent linear form Ι was attained. The last stage of simplicity having thus been reached, no further modifications of the lapidary type were possible.

Tau. The same cause accounts for the persistency in the shape of *tau*, which varies less than any other letter, our modern capital Τ hardly differing from the Baal Lebanon form.

Rho.[1] The Phœnician letters 𐤃 𐤀 𐤋 𐤓, whose resemblance causes much ambiguity in Semitic scripts,[2] were conveniently differentiated in the Western alphabet into Β D Ρ R and into Β Δ Π Ρ in the Eastern. Even before the transmission of the alphabet to Italy the primitive Greek *rho*, Ꝑ, which at Thera is hardly distinguishable from *delta*,[3] began to be differentiated by a short tail, Ꝑ. This feature was perpetuated in

[1] The name ῥῶ is anomalous. The Semitic *resh* or *rhos* would by analogy become *rhosa* in Greek, but since *s* normally disappears between two vowels, this would give *rhoa*, and the vowels finally coalescing, we should have *rho*.

[2] See vol. i., p. 164.

[3] See the Thera inscriptions, Nos. 1, 2, 6, on pp. 30, 33.

the Latin R, thus discriminating *r* from *p*, which in Italy took the forms ⊢ and ⊢, instead of ⊢ and Π. The tailed form of *r* did not permanently establish itself in Greece, where *delta* and *pi* had assumed the convenient types Δ and Π. The forms ⊦ and R disappear about the middle of the 5th century B.C., when the classical type P was generally adopted. In the oldest MSS. the loop, apparently for the sake of symmetry, had already been lowered to the line, giving P, whence arose the minuscule *ρ*.

Beta. The early forms of *beta* exhibit great diversity. Unfortunately this letter does not occur in any of the inscriptions from Thera, the oldest known forms being the 7th century ⊓ and ⊐ from Corinth and Corcyra. We have C at Paros, Ceos, and Thasos, and ⋀ at Melos, Anactorium, and Selinus.[1] Elsewhere the early form is ⊵, afterwards replaced by B, as at Abu Simbel, and in an inscription at Ephesus attributed to Crœsus.

Gamma. In the earliest inscriptions it is sometimes difficult to distinguish between γ, ⊦, λ, π, all of which approximate to the form ⊦. A differentiation

[1] Kirchhoff's contention that the Corinthian and Melian letters were derived from ⊵ is plainly inadmissible, although all the forms, including the Etruscan 8 (*f*), may, as has been already suggested, be obtained from the Hieratic . But as we have C = *p* in Crete, it is possible that the Parian C = *b* may have been derived from *pi*; and, since *β* sometimes represents a primitive digamma (cf. Bellerophon = vellerophon, and barbaros = varvara), the Melian form ⋀ may perhaps have been obtained from *vau*, .

was soon established, *pi* and *lambda* taking the forms Γ and Λ in the East, and Ρ and ⊦ in the West, while the Corinthian *gamma* ⌐ connects the Ionian Γ and the Chalcidian <, which became the source of the Italic C.

Mu and *Nu*. The assimilation of the contiguous letters F and E helps to explain that of *mu* and *nu*. The primitive forms are ⋔ and ⋎, which became ⋀ and ⋁, and afterwards, on the disappearance of *san*, M and N, and μ and ν in the minuscule. The names seem also to have been affected by assonance, as has probably been the case with *zeta* and *eta*.

§ 9. THE ASIANIC SCRIPTS.

While the classical Greek alphabet was being evolved in the Ionian cities of the Asiatic coast, numerous scripts, more or less closely related to the Greek, prevailed among the non-Hellenic races. Setting aside the Aramean of the Satrapies, which has been already discussed,[1] it is possible to recognize five distinct alphabets—the Lycian, the Carian, the Cappadocian, the Phrygian, and the Pamphylian; to which the Lydian,[2] the Mysian, and the Cilician may probably

[1] See vol. i., p. 258.

[2] To the Lydian alphabet has been assigned a fragmentary inscription of five letters found on the base of a column, probably given by Crœsus to the earlier temple of Artemis at Ephesus. See *Trans. Soc. Bibl. Arch*, vol. iv., p. 334, and vol. vii., p. 279, note.

be added. Some of these alphabets are simply archaic Greek; others appear to be unrelated either to the Greek or to the Phœnician, while the remainder contain both Hellenic and non-Hellenic elements.

The Phrygian alphabet was determined by Lassen[1] from the inscriptions on seven rock-cut tombs at Prymnessus, one of which was the sepulchre of a king who bore the name of Midas. It seems to be only an archaic type of the Greek alphabet. Thus for *u*, *p*, and *g*, we have the Thera forms Ϝ Γ Ϸ. The use of Ϝ in an eastern alphabet is also a token of early date, this letter having already disappeared from the Ionian alphabet in the 7th century B.C.

The scanty remains of the Mysian and Cilician scripts[2] are of a wholly different order, the characters having no recognizable relations to either the Greek or the Phœnician letters. The other alphabets of Asia Minor present a curious problem, some characters being plainly of Greek origin, and others of an unknown and mysterious type. These mixed alphabets are the Carian, the Cappadocian, the Pamphylian, and the Lycian.

On the knees of the colossus at Abu Simbel in

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[1] *Z. D. M. G.*, vol. x.

[2] For the Cilician script we have inscriptions found by von Hammer, and a coin with seven characters neither Greek nor Aramaic. See Gesenius, *Monumenta*, p. 287, and plate 37, U. The characters on the whorls found at Hissarlik represent the Mysian alphabet. They are engraved in the 3rd Appendix to Schliemann's *Ilios*.

Nubia, on which the Ionian mercenaries of Psammetichus engraved the cardinal monument of the early Ionian alphabet, are four records in an unknown script. It has been supposed to be Carian, since we learn from Herodotus that Carians as well as Ionians took service with Psammetichus.[1] Four similar inscriptions have been found at Abydos, and others on the sites of Memphis and Bubastis (Zagazig). From Caria itself we have a single short inscription discovered by Forbes on a tomb at Krya on the Gulf of Scopea. The nature of the Carian language being unknown, these records have hitherto defied the efforts of decipherers. Apparently between thirty and forty distinct characters are employed, about half of which seem to be of the Greek type.[2]

The alphabet of Cappadocia is probably represented by two short inscriptions discovered at Eyuk on the Halys, which have only been conjecturally deciphered. There are Greek letters of the Phrygian type, such as Ϝ (*p*) and F, together with non-Hellenic characters.

The alphabet of the later Pamphylian inscriptions and coins is Greek of the western type, and is doubtless to be referred to Peloponnesian colonists. In the earlier records non-Hellenic characters are found.

These alphabets are as yet very imperfectly known, the inscriptions being few, brief, and practically

[1] See p. 13, *supra*.

[2] The Carian inscriptions have been discussed by Prof. Sayce in *Trans. Royal Soc. Lit.*, N. S., vol. x.

undecipherable. The case is different with the Lycian. Though the language is plainly non-Aryan, it has been possible to determine with certainty the values of all the characters except two. This result is due to the fact that among the numerous inscriptions discovered in Lycia by Sir Charles Fellowes, there are three bilinguals in Greek and Lycian, together with a long record containing 250 lines, engraved on the obelisk from Xanthus, now in the British Museum. From a Greek inscription it appears to have been erected by a Lycian satrap during the reign of Artaxerxes Longimanus (465–425 B.C.). Taking this record as an epigraphic standard, the oldest of the Lycian inscriptions have been assigned to the 6th century B.C., and the latest to the 4th, when, owing to the conquests of Alexander, the Lycian alphabet was finally replaced by the Greek.

The Lycian characters were mostly deciphered by Sharpe, whose labours were completed by Schmidt. There are twenty-eight letters, about half of which are Greek, the rest being curious and complicated forms found in no Greek alphabet. The fourteen consonants, with two exceptions, + *h* and)(*th*, are archaic Greek of the Phrygian type. Of the fourteen vowels, four, A E I O, are also Greek, the others, which constitute an elaborate and delicate system of vocalic notation, being non-Hellenic. The Greek letters do not appear to have been obtained, as might have been expected, from the contiguous alphabet of Ionia, but, as is shown

by the forms 𐊴 𐊶 𐊸 𐊹, are of the Phrygian or the Pamphylian type. The absence of *upsilon* may also be taken as an indication of the extremely early date at which the Greek letters were obtained.

For nearly forty years after the recovery of the Lycian alphabet the nondescript characters, amounting to about half of the whole number, were supposed[1] to be merely fantastic and arbitrary inventions, based possibly on Greek forms. It is only within the last two or three years that the origin and true nature of these signs has been made clear. The explanation, now that it has been found, illustrates strikingly the axiom that abnormal forms are of supreme epigraphic significance, constantly affording the clue to great discoveries. The light came at last from an unexpected source. In 1852 the duc de Luynes[2] published certain coins and inscriptions from Cyprus in an unknown character, to which the name of Cypriote was given. In 1868 de Vogüé added others, among which was a short bilingual in Greek and Cypriote.[3] This might easily have led to the decipherment of the character, but no results were obtained, owing, as it now appears, to the incorrectness of the transcription. In the next year, however, Mr. Hamilton Lang discovered at Dali,

[1] See Kirchhoff, *Studien*, p. 47 (1877). Lenormant, *Alphabetum*, p. 209, (1873), pronounces them to be '*combinaisons purement artificielles.*'

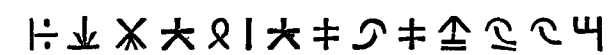
[2] De Luynes, *Numismatique et Inscriptions Cypriotes*, Paris, 1852.

[3] *Journal Asiatique*, vol. xi.

on the site of the ancient Idalion, a longer bilingual, containing no less than one hundred Cypriote characters, with a Phœnician translation dated in the 4th year of Melekiathon, about 375 B.C.[1] The tablet having been deposited in the British Museum, was submitted to the examination of the late George Smith. By means of the Phœnician version, and skilfully availing himself of the aid of Cypriote coins, he succeeded in identifying the proper names in the two records, and in determining the phonetic values of several of the mysterious characters which had for nearly twenty years defied the efforts of decipherers. The title of the Cypriote monarch, corresponding to the word *Melek* in the Phœnician version, proved to be *Ba-si-le-u-se*, whence it followed that the unknown Cypriote language, which had excited so much curiosity, was neither more nor less than Greek! The clue thus happily discovered was at once followed up by an eager band of scholars, chief among whom the names of Birch, Brandis, Schmidt, Ahrens, Deecke, and Siegismund deserve honourable mention, who soon placed on a firm foundation the interpretation of the Cypriote texts, now amounting to a considerable number. The numerous variant forms were reduced to between fifty and sixty types, which were shown to constitute not an alphabet, but a syllabary. As an example of the Cypriote script, we may take the inscrip-

[1] See vol. i., p. 224; *Trans. Soc. Bibl. Arch.*, vol. i., 1872; *Corpus Inscriptionum Semiticarum*, p. 104, and plate xiii.

tion of ownership on some gold armlets from Kurion, which must have belonged to Ithyandros, the king of Paphos who rendered homage to Assurbanipal when that monarch marched on Egypt, B.C. 620:[1]



e - te - va - do - ro to pa - vo pa - si - le - vo - se.

Ἐτεάνδρου τοῦ Πάφου Βασιλέως.

There could be little doubt that the Cypriote syllabary, thus curiously recovered, was no arbitrary invention, but the survival of an extremely ancient script, which must have prevailed in Cyprus prior to the introduction of alphabetic writing. The origin of this syllabary, and its relation to other scripts, remained for some time without any satisfactory explanation. The first attempt was made by Dr. Deecke,[2] who, following up a hint thrown out by Brandis, endeavoured to show that the Cypriote characters were obtained from the Assyrian Cuneiform, which, he suggested, might have been introduced in the reign of Sargon, 710 B.C., when the island was conquered by the Assyrians.

This explanation was received with hesitating, but general acquiescence, till the publication of Schliemann's *Ilios* in 1880. In an Appendix to this work Professor Sayce discussed the characters inscribed on the Trojan

[1] *Trans. Soc. Bibl. Arch.*, vol. v., p. 88.

[2] Deecke, *Der Ursprung der Kyprischen Sylbenschrift*, Strassburg, 1877.

whorls found in the lower stratum at Hissarlik, some of them at a depth of more than thirty feet below the surface, and succeeded in showing that they must be regarded as archaic forms of Cypriote characters.[1] The chronological and geographical inferences drawn from this startling discovery were not only fatal to Dr. Deecke's proposed derivation of the Cypriote from the Cuneiform in the 8th century B.C.,[2] but suggested the true solution of this and other problems not less perplexing.

It was manifest not only that writing was practised in the Troad before the introduction of either the Phœnician or the Greek alphabet, but that the non-Hellenic characters in the Lycian, Carian, and Cappadocian alphabets, as well as the Cypriote syllabics, were all derived from a common source,[3] a syllabic writing, evidently of immense antiquity, which prevailed

[1] In 1874 Professors Haug and Gomperz had abortively attempted a similar solution.

[2] Other insuperable objections to Dr. Deecke's theory have also been brought forward. See *Trans. Soc. Bibl. Arch.*, vol. vii., p. 280.

[3] As early as 1872 Lenormant (*L'Alphabet Phénicien*, vol. i., p. 107) had sagaciously suggested that the Cypriote syllabary and the non-Hellenic elements in the Lycian and Carian alphabets would ultimately prove to be derived from an ancient graphic system common to the peoples of Cyprus and Asia Minor. In 1877 this suggestion was followed up by Deecke, who explained the connection of some of the Lycian and Cypriote characters, but without perceiving that this discovery was fatal to his theory of the Cuneiform origin of the Cypriote.—Deecke, Beilage to Müller's *Etrusker*, vol. ii., p. 524.

throughout the whole of Asia Minor, and which has been designated by Professor Sayce as the Asianic syllabary. It must have been owing to the insulation of Cyprus that this primitive script lingered there down to historic times, elsewhere giving place to the Greek alphabet, which, however, incorporated certain signs from the older script.

The mysterious characters in the alphabets of Asia Minor now receive a very easy explanation. We have for example :—

CYPRIOTE.	LYCIAN.
a	*a*
	e
va	*o*
	w
o	*u*
ya	*a*
e	*i*
to	*th*
ku	*h*

The Cypriote signs also explain many of the unknown characters in other Asianic alphabets. Thus the Cypriote *ko*, appears in Carian and Pamphy-

lian; 𐊫 *mo*, in Carian; 𐊬 *se*, in Cilician; 𐊭 *ri* and 𐊮 *ma*, in Cappadocian.[1]

To the student of Alphabets the Cypriote syllabary is of great interest as an example of an independent graphic system, unrelated to the Semitic alphabet, which was rapidly advancing on the path of alphabetic evolution at the time when it became extinct. Its further development was arrested by the competition of an alphabet which having already reached a more advanced stage, proved successful in the struggle for existence. If it had not been thus superseded, it would doubtless have gradually lost its syllabic character, and have become the definitive alphabet of Greece, and therefore of civilized Europe and of the western world.[2]

The Lycian alphabet claims attention chiefly as an abortive attempt to solve the problem of vocalic notation. This was effected by the Greeks by the process of internal evolution, symbols for the vowels being developed out of the Semitic breaths and semi-

[1] See Sayce, in Schliemann's *Ilios*, p. 699.

[2] It has been maintained by Dr. Deecke and Professor Sayce that some of the additions to the Greek alphabet, notably *upsilon*, and the western *chi* 𐌕, which became the parent of the Roman numeral L, 50, were actually obtained from the Cypriote syllabary. To the reasons already urged (pp. 82, 91) against this opinion, may be added the fact that the Cypriote *u* took an entirely different form in the Lycian alphabet, and that the form of *chi* in question being distinctly western, is more likely to have arisen out of the western letter *koppa* than from a foreign character peculiar to Asia and Cyprus.

consonants, while the Lycians attained the same end by the incorporation of characters derived from another graphic system.[1]

Certain chronological inferences are suggested by the fact that while the consonants of the Lycian alphabet are, as a rule, of Greek origin, the non-Hellenic characters represent vowels. It would seem that in Lycia the Greek alphabet came into competition with the Asianic syllabary before the Cypriote syllabics had become consonants, and before the Greek vowels had been fully developed. The best elements of each system were taken. Greek letters representing pure consonants replaced the clumsier syllabics, and were combined with the elaborate and delicate notation for the vowels which was possessed by the rival script. It is especially worthy of note, as an indication of date, that *upsilon*, which already appears in the earliest of the Thera records, is not found in the Lycian alphabet, which only possesses the four oldest of the Greek vowels, **A E I O**. Hence it may be concluded that the formation of the Lycian alphabet belongs to a period more remote than any of which we possess direct epigraphic knowledge.

This conclusion agrees with all the other available evidence. Dr. Schliemann's whorls from Hissarlik tend to prove that at the time of the destruction of

[1] The Karshuni, the Mongol Galik, the Coptic, and the Mœso-Gothic scripts also show how alphabets may be supplemented by the incorporation of alien characters.

Troy the only graphic signs used in Mysia were the Asianic syllabics, which may probably be identified with the σήματα λυγρά of Homer (*Il.* vi. 168). As we shall presently see, the Asianic syllabary must have been employed throughout Asia Minor long before the arrival of the Phœnician colonists in the Ægean in the 12th century B.C. In the 7th century the Cypriote writing was already obolescent in Cyprus, and yet the Cypriote syllabary was plainly only a late survival of the more comprehensive[1] and more archaic syllabary of Asia Minor.

To complete the solution of the problem offered by the Asianic alphabets one step only was required, namely, the discovery of the source from which the Cypriote syllabary was itself obtained. It had no recognizable affinities with the graphic systems of the Greeks, the Phœnicians, the Egyptians, or the Assyrians, but the analogy of other scripts made it probable that it was the ultimate survival of some extremely ancient mode of picture-writing.

The recent discovery of the so-called "Hittite" hieroglyphs has cast a flood of fresh light upon the question. In 1871, Mr. Tyrwhitt Drake obtained copies of five inscriptions in an unknown hieroglyphic character from Hamath on the Orontes, and others of a similar nature have recently been excavated from a

[1] Professor Sayce considers that the Asianic syllabary must have comprised about 100 characters, whereas the cursive and conventionalized Cypriote signs amount only to 55.

mound at Jerabis, on the upper Euphrates, which has been identified with the site of Carchemish, the northern capital of the Hittites. That their empire extended as far as the Euxine and the Ægean is shown by hieroglyphs and sculptures in the unmistakeable style of Hittite art, which are scattered over Asia Minor, more especially in Lydia, Lycaonia, Cappadocia, and Cilicia.[1]

These monuments are those of a people who have been identified with the Hittites (Khittim) of the Old Testament, the Kheta of the Egyptian monuments, the Khattai of the Assyrian records, and the Κήτειοι of Homer (*Od.* xi. 521). They were one of the most powerful peoples of the primæval world, their empire extending from the frontier of Egypt to the shores of the Ægean, and, like the Babylonians and the Egyptians, they possessed a culture, an art, and a script peculiar to themselves, and plainly of indigenous origin.

Scholars are only just beginning to realize the vast

[1] The chief Hittite monuments hitherto discovered are at Ibreez in the ancient Lycaonia, at Eyuk and Boghaz Keuï in Cappadocia, and in Lydia at Karabel near Smyrna, on the ancient high road between Ephesus and Sardis. Eight seals with Hittite characters, probably once attached to treaties, were found by Layard in the record chamber of the palace of Sennacherib at Kouyunjik. These seals and the inscribed stones from Carchemish are now in the British Museum. The Hamath inscriptions were first published in Burton and Drake's *Unexplored Syria.* Most of the Hittite inscriptions as yet known are engraved in *Trans. Soc. Bibl. Arch.*, vol. vii., part 3.

extent of the dominion of the Hittites, and their important place in primitive history. Till the rise of Assyria they were the most powerful nation of North Western Asia; after that event they held the balance of power between Egypt and Assyria. Dr. Schliemann's discoveries at Troy and the Hittite monuments scattered over Asia Minor, as far west as the neighbourhood of Smyrna, prove the extent of their empire to the west,[1] while to the south, at a time prior to the Exodus of the Hebrews, their dominion extended as far as Hebron, and, if Mariette is right in his belief that one of the Hyksos dynasties was Hittite, they must have established their rule over Egypt itself. In the 17th century Thothmes III., the greatest of Egyptian conquerors, claims to have exacted tribute from the Kheta as well as from Nineveh and Babylon. In the 14th century they contended against Egypt on equal terms. The most important event in the reign of Rameses II., sculptured on a host of temples and celebrated in the epic poem of Pentaour, is his campaign against the Kheta, terminated by the indecisive battle of Kadesh, resulting in a treaty in which both parties pledged themselves not to invade the dominions of the other.

In the 12th century, when the Phœnicians advanced

[1] When attacked by Rameses in the 14th century they were able to summon as allies the Derdeni of Iluna and the Masu of Pidasa, in whom we may perhaps recognize the Dardanians of Ilion and the Mysians of Pedasos.

to the Ægean, the Hittite power had begun to decline, and by the time of Solomon their empire was broken up into separate kingdoms by internal divisions, and weakened by the encroachments of neighbouring Semitic nations, and was finally brought to an end in 717 B.C. by the capture of Carchemish by the Assyrians under Sargon. Their speech was clearly neither Aryan nor Semitic, and seems to have belonged to the great Alarodian family which was spoken in Cilicia, Cappadocia, Lycaonia, and Armenia, and whose nearest living representative is believed to be the language of the modern Georgians.

This powerful Hittite empire, stretching from the Euphrates to the Ægean, from Syria to the Euxine, attained its greatest extension between the 17th and 14th centuries, long before these regions were affected by either Phœnician or Assyrian influences. It is now admitted that the primitive art, the mythology, and the metrical standards of Asia Minor were to a great extent obtained from the Hittites, and the independent system of picture-writing which they possessed offers an obvious source from which the Asianic syllabary might have been obtained. That this was actually the case there is every reason to believe. Professor Sayce has succeeded in assigning phonetic values to several of the Hittite hieroglyphics; and these, with hardly an exception, explain the origin of homophonic characters in the Asianic and Cypriote scripts. Some of these identifications are set forth in the following

Table. In the present state of Hittite decipherment they can only claim to be provisional, but they may perhaps suffice to show that the true origin of the Cypriote syllabary has at last been discovered.

HITTITE.	CYPRIOTE.
i, e	*yi*
ka, ku	*ka*
te, to	*to*
me, mo	*mo*
se	*se*
si	*si*
ti, di	*ti, di*
u	*o*

CHAPTER VIII.

ALPHABETS OF HELLENIC ORIGIN.

1. *The Italic Alphabets.* § 2. *Latin.* § 3. *Greek Uncial and Minuscule.* § 4. *Latin Uncial and Minuscule.* § 5. *Coptic.* § 6. *The Slavonic Alphabets.* § 7. *Albanian.* § 8. *The Runes.* § 9. *The Oghams.*

§ 1. THE ITALIC ALPHABETS.

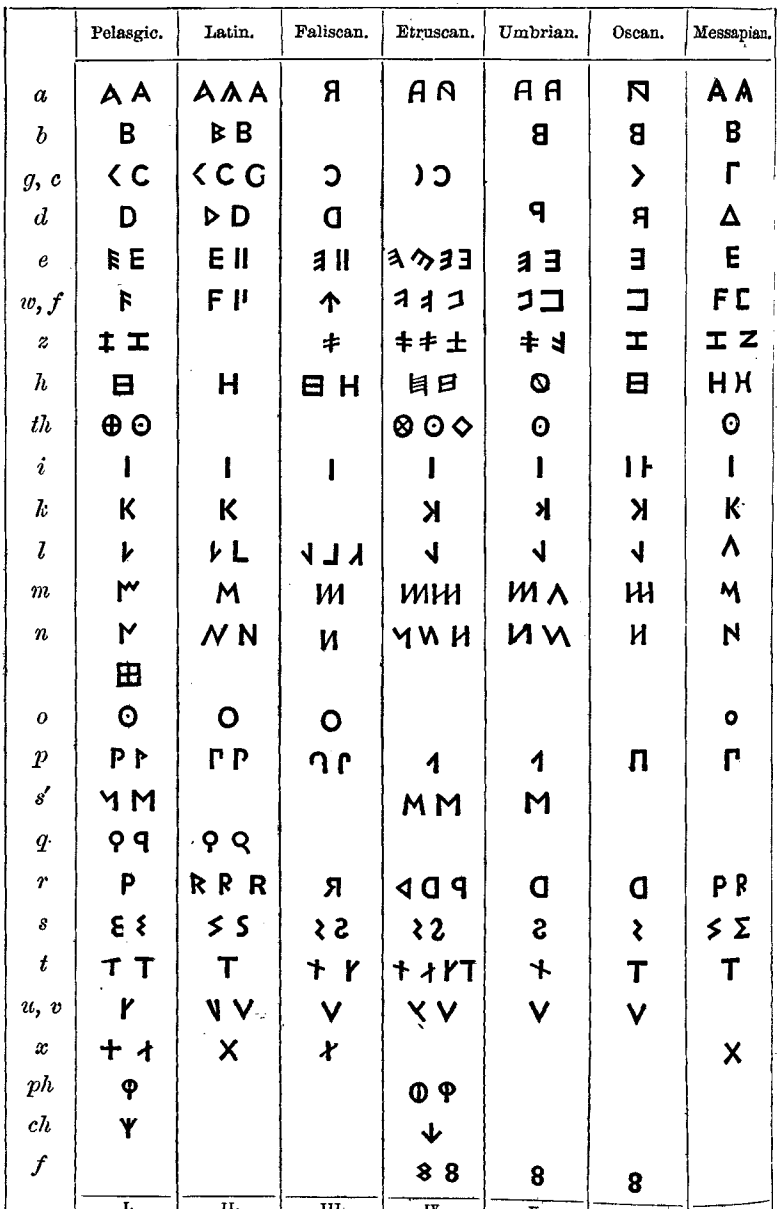
If Phœnician commerce was the earliest factor in the civilization of Europe, Greek colonization was the second. During the 8th and following centuries a girdle of Hellenic settlements was stretched round the Mediterranean shores. The narrow area of Great Britain is a mere speck on the map compared with the vast regions to which the name of Greater Britain has been happily applied; and, in like manner, Hellas itself was dwarfed by the great colonial realm whose outposts were nearly 3000 miles apart, extending from the neighbourhood of Barcelona and Marseilles, by Naples, Syracuse, and Tripoli, as far as Odessa, Trebizond, and Kertch. The spread of the English language and the English alphabet over half the

civilized globe may be compared, not inaptly, with the diffusion of Hellenic culture and Hellenic scripts throughout the Mediterranean region, originating in the pre-Christian centuries various derived alphabets, Iberian, Gaulish,[1] Etruscan, Latin, and Runic, followed at a later time by the Mœso-Gothic, Glagolitic, Cyrillic, Coptic, and Albanian.

The great extension of Greek colonization was contemporaneous with the transitional epoch of the Greek alphabet, during which diverse scripts prevailed in the Greek republics. The colonial alphabets naturally conformed to the types prevailing in the parent states. Rival colonies were planted side by side in close proximity, as in the case of the Oriental and Levantine factories of mediæval Europe. Thus Syracuse and Corcyra were Dorian colonies from Corinth; Gela and Agrigentum in Sicily, and Rhoda in Spain, were also Dorian, but from Rhodes and Crete; Tarentum was Spartan; Crotona, Metapontum and Pæstum were Achæan; Cyrene in Africa was a Dorian colony from Thera; Emporiæ in Spain, Massilia and Nicæa in Gaul were from the Asiatic Phocæa; Naxos, Leontini, Catana, Messana, Mylæ, and Himera in Sicily, Cumæ and Neapolis in Campania, and Chalcidice in Thrace were founded by the Eubœan cities of

[1] The Iberian and Gaulish alphabets are very imperfectly known. They were probably derived from the Greek alphabets of Emporiæ and Massilia. See Sayce, in *Trans. Royal Soc. Lit.*, N. S., vol. x.; and Faulmann, *Buch der Schrift*, p. 168.

THE ITALIC ALPHABETS.



Chalcis and Eretria; while Olbia, Sinope, Trapezus, and other Euxine colonies were from Miletus.

Some apparent anomalies in the irregular distribution of Hellenic alphabets can thus be explained. To take a single instance, the diversities of the numismatic alphabets of the adjacent cities of Syracuse and Naxos offer no difficulty if we remember that one was a colony of Corinth and the other of Chalcis. Down to the time of the Roman conquest the alphabets of the cities of Magna Græcia and Campania were the Greek alphabets of the parent states. These cities continued to be Greek cities, inhabited by Greek colonists. The case is different when we come to consider what may more properly be called the ITALIC Alphabets, the national alphabets of the Etruscans, Umbrians, Oscans, and Latins, which, though ultimately of Greek derivation, were profoundly modified in accordance with the phonetic necessities of races speaking Italic dialects.

The distinct Italic alphabets are five: the Umbrian, which prevailed to the east of the Apennines; the Etruscan, north of the Tiber; the Oscan in Campania; the Faliscan and the Latin, wedged in between the Etruscan and the Oscan. The Volscian and the Samnite are little more than early forms of the Latin, and the Campanian or South Etruscan of the Oscan. The Messapian alphabet, used in inscriptions from Calabria, may be left out of account, being Hellenic rather than Italic.

Of the others, the Etruscan and the Latin have the

least in common. The Umbrian belongs to the Etruscan type, and the Faliscan to the Latin. The Oscan is intermediate between Latin and Etruscan. Hence it is evident that the characteristic peculiarities of these alphabets are largely due merely to local proximity. The differences, however, are considerable. Latin is written from left to right, while all the rest are retrograde. The Etruscan rejects the soft mutes, *b*, *g*, *d*, and retains the aspirated mutes *th*, *kh*, *ph*, while in Latin the rule is reversed, the aspirated mutes being rejected and the soft mutes retained. The Umbrian and Etruscan use both *san* and *sigma*, the rest have *sigma* only. The Etruscan, Umbrian, and Oscan have a new letter 8 (*f*), and discard both O and X, which the Latin and Faliscan retain. In Latin alone, Q is retained and H is open.

The affiliation of the various Italic alphabets has now to be determined. As to the source of the Latin alphabet, all scholars are now agreed. Its Chalcidian affinities were pointed out by Otfried Müller, recognized by Mommsen, and finally established by Kirchhoff. It is characterized by the test forms C L X S P D R instead of Γ Λ Ξ Σ Π Δ P, and by the retention of F and Q. The use of X shows that it was neither Ionian, Ægean, Corinthian, Attic, or Argive; ⊦ that it was not Peloponnesian or Achæan; C and Q that it was not Bœotian. Only the Eubœan alphabet is left an origin which accords with all the other tests.[1] For

[1] See the Tables on pp. 60, 66.

the same reasons the Chalcidian origin of the Faliscan alphabet must also be admitted.

Opinion has been more divided as to the source of the Etruscan alphabet. Its peculiarities have been referred to the influences either of Athenian or of Corinthian potters, while a direct derivation from the Phœnician alphabet on the one hand, or from the Chalcidian on the other has been asserted.

Putting aside the inscriptions on vases found in Etruscan tombs, which were doubtless extensively imported both from Corinth and from Athens, and confining ourselves to the lapidary alphabet, it must be acknowledged that the presence of the non-Phœnician letters **V Φ**, and of the vowels **A E I**, is inconsistent with a direct Phœnician derivation, the suggested Corinthian or Athenian origin being also excluded by the use of the character ↓ (*ch*), while the form ⊦ (*l*) establishes the Chalcidian derivation of the Etruscan alphabet, as well as of the Umbrian and Oscan.

Since all the Italic alphabets, with the exception of the Messapian, belong to the Chalcidian type, it may be asked whether they were separately derived from Eubœa, or whether they are merely varieties of a single primitive alphabet which prevailed throughout central Italy.

The abecedaria of Formello, Cære, and Colle (see p. 74), supply an answer, singularly conclusive, to this question. They exhibit authentic examples of the

alphabet which must have been used by the first Greek settlers in Italy, and which, for want of a better designation may be conveniently called "Pelasgic." A reference to the preceding Table will suffice to show that all the national Italic alphabets, Umbrian, Oscan, Etruscan, Faliscan, and Latin, great as are their apparent diversities, can be readily explained by taking this Pelasgic alphabet as the common prototype. It contains all the exceptional letters and exhibits all the test forms of the various Italic alphabets. The variations are merely variations by defect. It is only needful to assume that each of the national alphabets dropped certain letters which were not required in the language of which it was the vehicle. Thus the Etruscans rejected the letters **B D O Q X**, retaining **M** (*san*) and the aspirated mutes **⊗ Φ Ψ**, which were disused by the Latins. The Umbrians kept **K** and **⊗** but dropped **C O Q X Φ Ψ**. The Oscans discarded **⊗ Φ Ψ X O Q M**, retaining **C** and **K**. In Faliscan the letters **C D O X** were kept, while **B K M Q ⊗ Φ Ψ** disappeared.

Hence the mere omission of unnecessary letters sufficiently accounts for the differences of alphabets which seem at first sight to have so little in common. In no case does any letter exhibit a form which the Pelasgic alphabet will not sufficiently explain.[1]

[1] The character **8** *f*, used in Etruscan, Umbrian, and Oscan, but found in no Greek alphabet, does not constitute any real exception to this statement. Its place at the end of the Etruscan abecedaria

The direction of the writing is a matter of no great significance. The earliest Latin records read from left to right, but in the other Italic scripts and on the oldest coins of Chalcis the writing is from right to left. Hence we conclude that the Chalcidian alphabet was transmitted to Italy at a time when the writing was still retrograde. In the abecedaria of Cære and Formello the new direction had already established itself, but two boustrophedon inscriptions from Cumæ are sufficient to prove that the reversal of the primitive direction was independently effected in Italy by the same process as in Greece.

It appears therefore that all the Italic alphabets were developed on Italian soil out of a single primitive type, of which the abecedaria exhibit a comparatively late survival. The inquiry only requires to be completed by investigating the history of the Pelasgic alphabet itself. That it was of Chalcidian origin there can be no reasonable doubt. It is unfortunate that so few early Eubœan inscriptions have survived the accidents of time, while those of later date are rendered nearly worthless for our purpose owing to the influences of contiguous alphabets. The deficiencies of the epigraphic record can, however, be sufficiently

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(see p. 79) proves that it was an additional letter obtained by differentiation from the primitive stock. In Latin, V had the sound of *w*, and F acquired that of *f*, but F retaining in Etruscan the sound of *v* or *w*, a new symbol was required for *f*, which was obtained by the differentiation of 8 from B, or as is usually supposed from Φ.

supplemented by means of the coins of the Chalcidian colonies, which retain the distinctive features which must have characterized the alphabet of the parent state. The Chalcidian alphabet thus reconstructed is practically identical with the Pelasgic alphabet of the abecedaria.[1] The test letters ᚦ X Y C D are by themselves decisive. Thus the evidence proves, first, that all the national alphabets of Italy were obtained from the Pelasgic alphabet, and, secondly, that this Pelasgic alphabet was derived from the primitive alphabet of Chalcis.

This conclusion, founded only on epigraphic considerations, conforms to the historic probabilities. The only Greek colony to which the geographical and chronological conditions make it possible to assign the parentage of the Pelasgic alphabet was a colony of Chalcis. The Greek colonies of Sicily and Magna Græcia, several of which were Chalcidian, were not

[1] Compare the Pelasgic alphabet in col. i. on page 126 with the Chalcidian alphabet in col. vi. on page 60, which has been compiled from the following materials. The coins of Chalcis have the legend Y ᚨ ᚦ, and the inscriptions give the letters ᚦ ᛊ ᛒ. Later Eubœan inscriptions from Styra and Eretria give ᛏ ᛃ S ᛞ R. The coins of the Chalcidian colonies of Zancle, Leontini, Naxos, Rhegium, and Neapolis give ᚦ X ᛊ R C; and the two short boustrophedon inscriptions from Cumæ yield D ᛗ R ᚦ ᛃ S. See Kirchhoff, *Studien*, p. 107. It must be assumed that *san*, which has not yet been discovered in any Chalcidian inscription, had not disappeared from the Chalcidian alphabet at the time of the foundation of Cumæ. It occurs on the coins of the neighbouring colony of Posidonia (Pæstum), which however was Achæan.

founded before 735 B.C.[1] The date is too recent, and the locality is too remote, to render such a source admissible. The objection does not, however, apply to the Chalcidian colony of Cumæ, of which Neapolis was an offshoot. The unrivaled natural advantages of this region, with its fertile soil, its perfect climate, its safe harbours, and its defensible position, might well commend the promontory which commands the Bay of Naples as the site of the oldest Greek settlement in the western Mediterranean, and also make it the focus from which Greek culture radiated among the aboriginal races of Italy. The very precise statement of Eusebius, who assigns the foundation of Cumæ to the year 1050 B.C., cannot perhaps be accepted as historical, but there is no reason for distrusting the tradition recorded by Strabo that Cumæ was the earliest Greek settlement in either Sicily or Italy. It can therefore hardly be placed later than the 9th century B.C., a date which would suffice to explain the extremely archaic character of the Pelasgic alphabet.

The Eubœan cities of Chalcis and Eretria, by which the colony of Cumæ[2] was founded, had sunk to a subordinate position at the familiar epoch of Greek history; but at an earlier period, before the rise to

[1] Professor Mahaffy has shown that there are grounds for believing that this traditional date may be too early by more than a century.

[2] The Æolic form of the name (Κύμη, 'the villages') lends countenance to the tradition that it was a joint colony of Æolians and Chalcidians.

power of Athens and Sparta, or even of Corinth and Miletus, they were among the most opulent of Hellenic states, possessing an extensive commerce with Lydia, and powerful colonies in Macedonia, Sicily, and Italy. The colonies of Rhegium and Zancle (Messana) commanded, like the parent cities,[1] an important channel of early commerce, while Cumæ and Neapolis in Campania, Naxos, Catana, Leontini, and Himera in Sicily, occupied regions of great natural wealth and fertility. Hence the later insignificance of Chalcis is no reason why we should hesitate to assign the primitive culture of Italy to a Chalcidian source.[2]

The date at which the art of writing was introduced

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[1] The site of Chalcis, commanding the navigation between the north and south of Greece, was marked out by its natural advantages for a Phœnician settlement. That it was so occupied we learn from Strabo (x., p. 447). Cothus, to whom the foundation of Chalcis is ascribed, is evidently a mere eponymus, like the Saxon leader Port, who is said in the Saxon Chronicle to have landed at Portsmouth (Portus Magnus). The old harbour of Carthage bore the name of the Cothon, from a little island of that name (cf. Hebrew קטן, 'to be small'). Doubtless the Phœnician settlement of Chalcis had also its Cothon, the name referring either to the channel of the Euripus, which here narrows to a width of only 40 yards, or designating a rocky islet, like that at Carthage, which divides the channel into two parts.

[2] That Hellenic culture reached the northern as well as the central regions of Italy from Chalcis is indicated by the significant fact that the coins of Populonia, which constituted the earliest Etruscan currency, follow the Euboic weight-standard, and imitate the numismatic types and devices of Eubœan cities, their legends also being in the Chalcidian alphabet. See Head, *Guide to Select Coins*, p. 13.

into Italy can only be determined approximately. Since the various Italic scripts were developed, on Italian soil, out of a single primitive type, it follows that between the introduction of this alphabet and the date of the oldest Etruscan or Latin inscriptions a considerable period, which cannot be less than two or three centuries, must be allowed for the diffusion of the primitive alphabet and the gradual formation of the national scripts.

Taking in conjunction the indications of date afforded by the Pelasgic abecedaria and by the survivals of archaic features in the separate Italic alphabets, it may be concluded that the introduction of the alphabet into Italy was decisively earlier than the inscriptions of Abu Simbel, but later than those of Thera.[1] The end of the 9th century B.C., to which the foundation of Cumæ has already been assigned, would thus appear to be a probable date. This would allow sufficient time for the diffusion of the Pelasgic alphabet in Italy, and the development of the various national Italic scripts.[2]

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[1] The primitive alphabet of Italy retained all the twenty-two Phœnician letters. The forms of *san*, *lambda*, and *zeta*, 𐌔 𐌋 𐌎, are older than any found at Thera, and are nearly identical with the Baal Lebanon forms. The Etruscan texts show that the primitive Italic script was retrograde, whereas at Abu Simbel the direction had been changed. On the other hand, the non-Phœnician letters *phi*, *chi*, and *xi*, which do not occur in the oldest of the Thera records, had been evolved.

[2] This conclusion agrees substantially with that of Helbig, who,

§ 2. LATIN.

The Latin alphabet, owing to political causes, finally displaced the other national scripts of Italy. As the alphabet of Rome, it became the alphabet of Latin Christendom, and the literary alphabet of Europe and America. It is now, with the single exception of the Arabic, the only alphabet possessing any claim to cosmopolitan extension. Its great historical importance may therefore justify a more minute examination of its peculiarities[1] than is necessary in the case of the Etruscan and other defunct sister alphabets, which have now only an historic interest.

Although the most familiar, and in a sense the most modern of all alphabets, the Latin, owing to a remarkable chain of causes, has adhered, more closely than any existing vernacular alphabet, to the oldest Phœnician type. The early date of its transmission to Italy accounts for the existence of its archaic

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arguing from the length of the Etruscan *sæcula*, places the introduction of alphabetic writing among the Etruscans between the years 750 and 644 B.C. The Etruscan script would necessarily be less ancient than the Pelasgic, from which it was derived. Dennis, *Cities and Cemeteries of Etruria*, vol. i., p. xlix, note.

[1] It has not seemed necessary to occupy space with an account of recent researches into the powers of the letters, the subject of Latin phonology being adequately discussed in Corssen's *Aussprache*, as well as in a book so generally accessible as Roby's *Latin Grammar*.

features, while Roman conservatism, lapidary use, and imperial extension, and, not least, its singular alphabetic excellence, have aided in preserving it from the deformation to which alphabets are liable.

The progressive instincts of the Ionians rapidly modified the Greek alphabet, which finally retained only nineteen of the twenty-two Phœnician letters, and added five, whereas the Latin alphabet possesses twenty of the Phœnician characters and only three new signs. And even of the two letters which were lost, one, *teth*, survived as the numeral sign for 100; and of the other, *tsade*, the name, curiously enough, has been preserved by the letter *zed*, though the character itself has disappeared.

The Latin alphabet is, however, essentially identical with the Greek. Seven letters, **C D L P R S X**, differ more or less in their forms; three, **C H V**, in their values; three, **X Y Z**, in position; two, **F Q**, which became obsolete in Greek, were retained in Latin, and one new letter, **G**, was evolved.

The forms of the Latin letters having been explained in the last chapter[1] by reference to the common parent types from which both the Greek and Latin diverged, it may here suffice to recapitulate the results. In the annexed Table the final Latin and Greek forms are placed side by side with their prototypes in the older alphabets.

[1] See pp. 80 to 108, *supra*.

Classical Latin.	Old Latin.	Old Greek.	Classical Greek.
C	<	< (	Γ
D	▷	▷ ▷	Δ
L	⊦	⊦ ⊦ ⊦ ⊦ ⊦	Λ
P	ꟼ	ꟼ ꟼ	Π
R	ꟽ	ꟽ ꟽ	Ρ
S	≶	≶ ≶ Σ	Σ
X	X	X + ⋿	Ξ

The development of the Latin alphabet can best be studied by comparing it, not with the sister alphabet of Ionia, but with its direct progenitor, the 'Pelasgic' alphabet of Italy, as it appears on the Formello vase (see p. 74). Here we find all the twenty-two Phœnician characters, with the addition, at the end of the alphabet, of four letters of Hellenic origin, **V X Φ Y**.

The letters *vau* and *koppa*, which were discarded in the Eastern alphabets except as numerals, were retained in Latin. The digamma, **F**, kept its form and its primitive station, but changed its value from *w* to *f*; *koppa* also was retained, but the vertical tail of the primitive letter ϙ became oblique **Q**, and the character was appropriated as the symbol of a favourite Latin sound, the velar guttural *kw*. *San*, which was retained

in Etruscan, disappeared in Latin as well as in Greek, probably because it had become a mere homophone of *sigma*, and because its form M bore an inconvenient resemblance to that of M. The aspirated mutes, *phi*, *chi*, *theta*, were also retained in Etruscan, but not being required in Latin as phonetic symbols were utilized as numerals. For 50 the Romans used the Chalcidian *chi* ↓, which assumed the less difficult lapidary type ⊥, and was then easily assimilated to L; while *theta* ⊙, which was employed to denote 100, was assimilated to C, doubtless because this letter was the initial of *centum*. For 1000 they used *phi* Φ, which was written CIↃ, a sign afterwards confounded with ↀ or M, the initial of *mille*; and the half of the primitive symbol Ↄ, also assimilated to a familiar form D, was employed to denote 500.[1]

The Latin symbols for *g*, *x*, and *z* do not occupy the same positions as the corresponding symbols in the Greek and Semitic alphabets; X and Z, which are descended from *samekh* and *zayin*, having been transferred from their original stations to the end of the alphabet, while G replaces Z in the seventh station.

When we first become acquainted with the Latin alphabet it ended with X, a letter which Quintilian

[1] On the Roman numerals consult the paper by Ritschl in the *Rheinisches Museum* for 1869. For reasons already assigned (see vol. i., p. 6) it is impossible that X can have been derived from *theta* ⊗, but there is no valid reason why it should not be identified with ⊞. See p. 77, *supra*.

calls *ultima nostrarum.* The abecedaria of Cære and Formello suggest an explanation of the way in which this letter came to be removed from the fifteenth station. It would seem that when Ξ (*s*) acquired its new value of *x* it was differentiated, as is the rule with polyphonic characters, into two forms, ⊞ (*s*) and + (*x*), the first of which retained the old place, but, as it denoted a sound sufficiently expressed by **S**, was ultimately disused; while the new symbol, representing the new sound, was relegated to the end of the alphabet. This explanation is confirmed by the parallel case of the evolution of **F** and **V** out of *vau*, and the transference of **V** to the end of the alphabet.

The chief innovation in the Latin alphabet was the development of **G**. How this was effected is curious and instructive. In the Chalcidian alphabet *g* was expressed by **C**, as is shown by the early coins of Rhegium, which bear the legend ИОИІƆƎЯ. The Etruscan language possessing no soft mutes, it hardened into *c*, and the characters **C** and **K** becoming homophones, the more troublesome sign, **K**, fell into disuse. This could hardly have occurred in Latin, which must always have possessed both the sounds. Hence the corresponding Latin usage[1] must be attributed to

[1] The letter **K** must, however, have originally existed in the Latin alphabet, since it occurs in a few early inscriptions, as in the words **KASTORVS** for Castoris, **KORANO.** for Coranorum, **KAEL.** for Cælius, **DEKEM.** for Decembres; and was long retained in certain conventional archaic abbreviations (**KAL.** for Calendæ, **K.**

Etruscan influences. Till the middle of the 3rd century B.C. the letter C is employed in Latin inscriptions to denote both *c* and *g*, the old usage surviving in the established abbreviations of C. and CN. for Gaius and Gnæus. But on account of the inconvenience of not being able to distinguish between the two sounds expressed by C, a slight differentiation gradually established itself in the form of the letter, C being used for *g*, and C for *c*. The new character first occurs in the well-known epitaph on Scipio Barbatus,[1] a monument which, to the visitor who unexpectedly comes upon it in the Vatican, brings home more vividly than anything else in Rome, the stately speech and the noble simplicity of the heroic age of the republic.

· · · · · CORNELIVS · LVCIVS · SCIPIO
BARBATVS · GNAIVOD · PATRE | PROGNATVS
FORTIS · VIR · SAPIENSQVE — QVOIVS · FORMA
VIRTVTEI · PARISVMA | FVIT — CONSOL
CENSOR · AIDILIS · QVEI · FVIT · APVD · VOS —
TAVRASIA · CISAVNA · SAMNIO · CEPIT —
SVBIGIT · OMNE · LOVCANAM · OPSIDESQVE ·
ABDOVCIT ·

The use of the new letter was doubtless well

for Cæso, MERK. for Mercatus), very much as ϙ survived in Greece till a late period as a numismatic character on the coins of Corinth.

[1] Scipio Barbatus was consul in 298 B.C., but the epitaph cannot be contemporaneous, being somewhat less archaic in style than the epitaph on his son, who was consul in 259 B.C. According to Ritschl, the date cannot be later than 234 B.C.

established before it was thought necessary to find a place for it in the alphabet. This was probably effected in the school of Spurius Carvilius, a grammarian who is supposed to have lived at the close of the 3rd century B.C. The seventh letter of the old alphabet, Ⱶ, not being needed for any Latin word, was at this time obolescent,[1] and the new letter **G** was foisted into its place.

In the 1st century B.C. the discarded letter **Z** was restored to the Latin alphabet, being required for the transliteration of Greek words.[2] The date of its reintroduction is shown by its position as the last of the letters, by the exceptional character of the name it bears, and by the adoption of the later Greek form, **Z** instead of Ⱶ.

The alphabetic position of **Y** shows that its introduction into the Latin alphabet was prior to that of **Z**. It was borrowed from the Greek alphabet in the time

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[1] It must have originally existed in the Latin alphabet, though there is hardly any actual evidence of the fact. It occurs in an extract given by Varrō from the Salian Song, and in a Latin transcription of an Oscan law of the time of the Gracchi. But it must plainly have retained its place in the alphabet, otherwise the new letter **G** would, like **X**, have been placed at the end of the alphabet instead of in the seventh station.

[2] It has been similarly introduced into the English alphabet, to which it did not originally belong. In the 15th century it crept in from the French, and its use is even now pretty nearly restricted to foreign loan words, as Zebulon, Zedekiah, zigzag, zest, zoology, azure, gauze, magazine, gazelle, zebra, zero.

of Cicero in order to express more precisely the sound of *upsilon*. This letter had previously been transliterated by V, which in Latin corresponded more exactly to the Greek *ov*.

It thus appears that the chronological successions of the innovations in the Latin alphabet are chronicled in the arrangement of its final letters V X Y Z.[1]

An obvious distinction between the Greek and Latin alphabets consists in the names borne by the letters. We learn from a line of Juvenal, "Hoc discunt omnes ante alpha et beta puellæ," that the Greek names were taught in Roman schools, even to girls; but for ordinary use there was another system of nomenclature, which has descended to ourselves. The vowels were designated by their sounds, and the consonants by the sound of the letter combined with a vowel in such a way as to conform to the law of least effort. The easiest vowel preceded the continuants and followed the explosives.[2] Thus we have *ef*, *el*, *em*, *en*,

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[1] In the Pelasgic abecedaria the five last letters are T V X Φ Y. In our own alphabet we have T U V W X Y Z. The numerals M and L testify to the former presence of Φ and Ψ in the Latin alphabet, from which, however, they disappeared before the date of the oldest extant inscriptions. The evolution of V is not later than the 9th century B.C., X must be as early as the 7th, Y and Z were successively borrowed from the Greek in the course of the 1st century B.C., while U and V were differentiated about the 10th century A.D., and W appears as early as the 11th.

[2] The rule is determined by physiological causes. It is easier to say *be* than *eb*, and *ef* than *fe*, the reason being that in pronouncing

er, es; and *be, ce, de, ge, pe, te.* The principle of least effort requiring a change of vowel for the letters *k, h, q, x,* they were called *ka, ha, qu, ix.*

The only exception to the rule is in the case of **Z**, which retains its Greek name *zed.* If this letter had continuously kept its place in the Latin alphabet its name would have been *ez.* It disappeared, as we have seen, at some time not later than the 3rd century B.C., and was reintroduced from the Greek alphabet in the time of Cicero. Its foreign origin is thus shown, not only by its form and its alphabetic position, but by its foreign name. It is curious that *zed* (*tsade*), which is the only one of the Phœnician names which has passed into our English alphabet, belonged to the only Phœnician letter which has disappeared from every one of the alphabets of Europe.

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the continuants the vocal organs are not completely closed, and the breath is escaping, so that a vowel sound is involuntarily produced before the consonantal sound can be heard, and hence we actually get *ef* before we come to *fe.* With the explosives, on the other hand, the contact being complete, the vowel sound is produced without conscious effort when the contact is relaxed, while a distinct effort is required to pronounce a precedent vowel; *eb* cannot be pronounced without being followed by *be* when the lips are opened. Hence the law of least effort requires that the vowel should precede the continuants and follow the explosives. The same law of least effort governs the formation of those names in which the vowel is other than *e.* For the back consonants *k* and *h* the vocal organs are in the position for pronouncing the back vowel *a,* and for *q,* which is pronounced still further back, the position is that required for *u.*

§ 3. GREEK UNCIALS AND MINUSCULES.

The early history of the Greek alphabet is based on inscriptions and coins. Lapidary forms are comparatively stable, but the use of more facile materials—parchment or papyrus—permitting graphic speed and facilitating ligatures, accentuated the tendencies in the direction of variation and deformation, and ultimately transformed the lapidary types.

The history of the formation of the lapidary character discloses a progressive improvement in the forms of the letters. The history of the formation of the modern minuscules begins with an epoch of deformation, succeeded by a period of regeneration.

The processes of phonetic decay and regeneration by which the Romance languages arose out of Latin are analogous to the processes by which the Romaic and Romance alphabets arose out of the alphabets of Greece and Rome.

With the decline of the empire the lapidary alphabets degenerated into irregular and formless scripts. Then, with the revival of culture, came the demand for a new book-hand, and out of the old elements arose the minuscule, a nearly perfect book-hand, cursive and rapid, but at the same time legible, regular, and beautiful. Thus two opposite principles are seen in operation; the law of least effort, by which legibility is sacrificed to ease and speed, and the effort after distinctness by

which the regeneration of the cursive scripts was effected.

Within the limits necessarily assigned to the present work it would be manifestly impossible to enter on any adequate discussion of Greek and Latin Palæography. The vast departments of knowledge which deal with the formation of modern scripts are the subjects of a copious literature, which by itself would suffice to constitute a considerable library. All that can be here attempted is briefly to epitomize the history of mediæval alphabets, to point out the landmarks of palæographic science, and to refer the student to trustworthy and accessible authorities.[1]

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[1] The invaluable autotype reproductions published by the Palæographical Society provide unimpeachable materials for the study of the science. The student who is unable to obtain access to these costly publications must content himself with the well-chosen series of photolithographic facsimiles contained in the *Schrift-Tafeln* published by Wattenbach for Greek (1876-77,) and by Arndt for Latin (1874, 1878). The best modern manuals are Gardthausen, *Griechische Palaeographie* (1879); Wattenbach, *Anleitung zur griechischen Palaeographie* (second edition, 1877); Wattenbach, *Anleitung zur lateinischen Palaeographie* (third edition, 1878). In these indispensable and scholarly works the bibliography of the subject is adequately discussed. A good estimate of the relative merits of books on Western Palæography will also be found in Birch, *The Utrecht Psalter*, pp. 44 to 62. Of the earlier works, Montfaucon, *Palæographia Græca* (1708); Mabillon, *De re diplomatica* (1709); and the great work of the Benedictines, Toustain and Tassin, *Nouveau Traité de Diplomatique* (1750 to 1765), still retain their value; while among more modern works may be named the splendid volumes of Silvestre, *Paléographie Universelle;* Wailly, *Élements de Paléographie,*

The Greek and Latin alphabets passed through parallel stages of development. At a very early time we find in contemporaneous existence three distinct scripts, the Capital, the Uncial, and the Cursive.[1] The lapidary alphabet, used for inscriptions and coins, is square and angular, the letters being of equal height, and composed largely of vertical and horizontal lines. Nearly the same letters, under the name of Capitals, are employed in early manuscripts, and continued to be used for titles and superscriptions. Secondly, there is the Uncial, a formal book-hand, clear and legible, used by professional scribes for rolls and codices. The term Uncial, which dates from the time of St. Jerome,

a book useful and generally sound; Sabas, *Specimena Palaeographica;* the valuable *Catalogue of Ancient Manuscripts in the British Museum.* Among the host of writers who have devoted themselves to the investigation of special departments of the subject, the chief are Tischendorf, Zangemeister, Westwood, Letronne, Bast, Sickel, Pertz, Delisle, Jaffé, Marini, Champoleon-Figeac, Garrucci, and Gregorio. Chassant, *Paléographie des Chartes et des Manuscrits* (seventh edition, 1876), and Leist, *Urkundenlehre,* are inexpensive little books which the beginner will find useful. A sound elementary English manual of Palæography does not exist, neither Astle's *History of Writing* nor Humphrey's *Origin and Progress of the Art of Writing* coming up to the requirements of modern science.

[1] We also use three different alphabets: capitals, for superscriptions and initials; cursive characters for correspondence; and the ordinary book alphabet. Familiarity prevents us from noticing the wide diversity of such forms as A a or B b , which are fossils, so to speak, derived from different formations, namely, from the lapidary type of the Augustan age, from the French book-hand of the 11th century, and from the Italian cursive of the 15th.

is in universal use and cannot now be displaced, but it arose out of a misconception, uncial letters not being necessarily so very large, and rarely an inch in height, as the name implies. It denotes a majuscule script in which the letters are not so square or so upright as in the lapidary alphabets. The forms are somewhat rounded, and have usually a slight inclination of the vertical strokes, the differences being mainly due to the nature of the writing material—papyrus or parchment instead of stone or metal.[1] Thus Ε, both in Greek and Latin, is an uncial form of the capital Ε. The third script, of which specimens exist nearly as ancient as the oldest uncials, was a careless and somewhat irregular cursive character, loose and straggling, employed for private letters, contracts, and accounts. A Tachygraphy or shorthand was also used from a very early period for notes and memoranda.

The development of the uncial and cursive alphabets proceeded independently till the 8th or 9th century, which was a period of graphic revolution both in the

[1] The distinction between capitals and uncials is sharper in Latin than in Greek. No Greek books are written in capitals, the manuscript capitals used for superscriptions being apparently a later introduction, while even in inscriptions uncial forms such as Ε C Ѡ begin to replace the lapidary prototypes Ε Σ Ω nearly a century before the date of the oldest extant MSS. In Latin no such very early uncial tendencies can be detected, and even after the uncials arose capitals continued to be used for books till both were replaced by minuscules.

East and in the West. A new book-hand was then evolved out of the cursive, incorporating, however, sundry forms from the contemporary uncial. By reason of its smaller size the new script goes by the name of minuscule, its chief characteristic being an increased tendency to pass above or below the two parallel lines which limit the body of the letter, as may be seen by comparing the letters Δ Η Λ Μ Ρ with δ η λ μ ρ, or Β D Η L Ρ Q with b d h l p q. The old majuscule cursive, which had become formless and illegible, was afterwards replaced by a new cursive developed out of the minuscule. The minuscule reached its perfection as a book-hand in the 11th or 12th century, after which time it continually degenerated till the invention of printing. The early printers adopted at first the corrupted forms of the contemporary book-hand, but ultimately reverted to the older character, which still maintains its place in printed books.

Thus, broadly speaking, the alphabetic developments were parallel and nearly synchronous in the East and in the West, so that the terms Capitals, Cursives, Uncials, and Minuscules can be correctly applied to corresponding types of the Latin and Greek alphabets. The developments of the Eastern and Western scripts were, however, independent, so that the history of each must be separately epitomized.

The oldest extant specimens of Greek manuscripts have been obtained from Egypt. This is explained

by the Hellenization of that country under the Ptolemies, and by the continuance of the ancient Egyptian practice of burying documents in tombs, their subsequent preservation being aided by the dryness of the climate. Among the uncial manuscripts the Homeric papyri rank first. The oldest, probably, are two fragments of the 17th book of the Iliad, containing altogether about 500 lines, which were obtained by Mr. Harris in 1849 and 1850 from a tomb known as the Crocodile Pit, at Menfalut in Upper Egypt. These fragments, which must have belonged to the same roll, are written in slender uncials, well formed, but somewhat difficult to read, owing to the discoloration of the papyrus. They cannot be later than the 1st century B.C., and may very possibly belong to the 2nd. More legible is the beautiful specimen of early Alexandrian calligraphy which is known as the Bankes papyrus. This is a roll containing the greater part of the last book of the Iliad, bought at Elephantine in 1821 by Mr. Bankes for £300. It has been conjectured that it was a *chef d'œuvre* executed by some grammarian for his own use, and buried with him in his tomb. It is assigned to the 1st century A.D., but may very possibly be older. Less careful in execution are three Orations of Hyperides, in slender uncials, obtained in 1847 by Messrs. Arden and Harris from the neighbourhood of Thebes.[1] Their age has been

[1] All these papyri are now in the British Museum. For facsimiles,

disputed, but the best judges assign the earliest to the middle of the 2nd century B.C.

The Egyptian papyri are succeeded by the Herculaneum rolls,[1] which are certainly older than the year 79 A.D., when the city was destroyed by a stream of lava from Vesuvius. These rolls (*volumina*), 1803 in number, are supposed to have constituted the library of Lucius Piso Cæsoninus, in whose sumptuous villa, outside the walls, they were found inclosed in a wooden cabinet, which, as well as the papyri, was charred by heat. The papyrus is nearly black, the writing being of a grey colour. The letters are small uncials, rapidly written and somewhat roughly formed. The papyrus being excessively tender, the process of unrolling, which may be watched any day in the Museum at Naples, is necessarily tedious, requiring the utmost skill and patience, so that not quite 400 of the rolls have as yet been unrolled and deciphered. The expectations which were at first entertained of recovering lost treasures of classical literature from the only ancient library which has come down to us have not been fulfilled, the rolls hitherto deciphered being mainly worthless treatises on physics, music, rhetoric, and kindred subjects by Philodemus and other third rate philosophers of the Epicurean school. The most

see *Cat. of MSS. in British Museum*, pl. 1 to 6; Wattenbach, *Schrift-Tafeln*, pl. 1, 2; *Pal. Soc.*, pl. 153, 126.

[1] For facsimiles, see Wattenbach, *Schrift-Tafeln*, pl. 4; *Pal. Soc.*, pl. 151, 152.

valuable, from a literary point of view, are some fragments of the Ethics of Epicurus, a treatise on historians, and another on the philosophers of the Academy.

After the papyrus rolls come the numerous vellum codices,[1] which are decisively later in date and are written in a more set uncial style. There were two leading schools, the Alexandrian and the Byzantine. The earliest example to which a definite date can be assigned on other than palæographical considerations belongs to the Byzantine school. It is a copy of the treatise of Dioscorides on plants, which was written for Juliana Anicia, a Byzantine princess, and is assigned to the year 506 or thereabouts.[2] The great value of this codex is that it affords a standard by which the age of other early uncial manuscripts may be estimated. Of the Alexandrian school, the cardinal examples are the three great Biblical codices, the Codex Vaticanus, the Codex Sinaiticus, and the Codex Alexandrinus.[3] The oldest is probably the Codex Vaticanus, which is assigned to the 4th century. It is written in small uncials, delicate, compact, and regular, approaching

[1] More than 300 are now known; of these Montfaucon was acquainted with not more than thirty.

[2] Facsimiles in Montfaucon, Silvestre, Lambecius, Tischendorf, and *Pal. Soc.*, pl. 177.

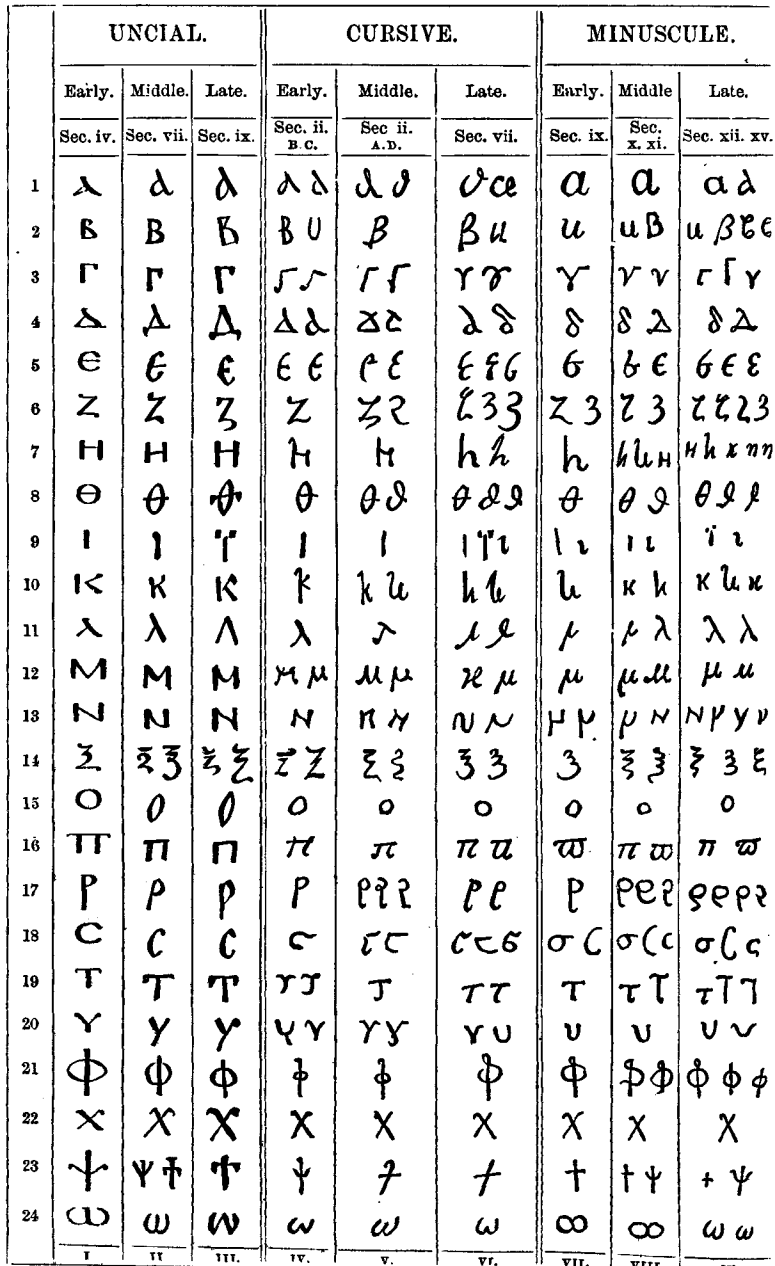
[3] See the facsimiles published by the Palæographical Society, plates 104, 105, 106. Cf. Gardthausen, *Griechische Palaeographie*, p. 143.

nearer to the lapidary type than the others. It is the most beautiful of the three, but is of less palæographical value, as the letters have been retouched throughout by a tenth-century hand. The Codex Sinaiticus is probably somewhat later, belonging to the end of the 4th or the beginning of the 5th century. Of this manuscript a few leaves, now at Leipzig, were discovered by Tischendorf in 1844, in a basket of fragments in the monastery of St. Catherine on Mount Sinai. In 1859 he succeeded in recovering a larger portion of the codex, which is now at St. Petersburg. The letters are square and broad, the horizontal strokes being fine hair lines. Nearly in the same style, but more regularly written, is the Codex Alexandrinus, now in the British Museum. It is assigned to the middle of the 5th century, and may be taken as the standard example of the Greek uncial alphabet.[1]

Of nearly the same date is the palimpsest Codex Ephraemi at Paris, which also belongs to the Alexan-

[1] The alphabet of the Codex Alexandrinus is given in col. i. of the Table on the following page. The codex being by several scribes the writing is not absolutely uniform throughout. The forms of the letters in the Table have necessarily been somewhat generalized, so as to represent the leading type of each period. To have given the absolute alphabets of individual manuscripts would in the limited space at command have been misleading and confusing. In Gardthausen's *Griechische Palaeographie* the reader who requires more minute detail will find the alphabets of 144 cardinal manuscripts, and others, less exact, in the *Specimena Palaeographica* of Sabas.

GREEK UNCIAL AND MINUSCULE.



drian school.[1] To the 6th century we may assign the Codex Bezæ at Cambridge, and the Codex Claromontanus at Paris, both of which exhibit contemporary forms of the Greek and Latin uncials, and are believed with good reason to have been written in the South of France.[2] After the 7th century[3] the Greek uncial loses its early style, and becomes narrow, elongated, and cramped, characteristics exaggerated in the Slavonic type[4] from which the Russian alphabet was derived. In the 9th century the new minuscule came into general use as a book-hand, and the uncials were only retained for liturgical purposes.

The uncial book-hand was not the only early Greek script. Recent discoveries in Egypt have revealed the existence of a Greek cursive character unknown to Montfaucon and the older Palæographers. This Greek cursive is of great importance in the history of

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[1] An indication of the Egyptian origin of this codex is the fact that the beautiful parchment on which it is written was, like that of the Codex Vaticanus and the Codex Alexandrinus, made from the skins of antelopes.

[2] *Pal. Soc.*, plates 14, 15, 63, 64.

[3] See col. ii. of the Table. Cf. Wattenbach, *Schrift-Tafeln*, plates 6, 7, 9, and Gardthausen, *Griechische Palaeographie*, plate 1.

[4] See col. iii. of the Table. Illustrations of the Slavonic type are given by Sabas, and by Wattenbach, *Schrift-Tafeln*, pl. 8, *Pal. Soc*, plates 26, 27, 154. The last, taken from a Greek Evangelistarium written in Cappadocia in 980, proves that the so-called Slavonic type was not confined to Slavonic lands.

the Greek alphabet, as from it the later minuscule character was to a great extent derived.

Examples of this cursive script, with which the Museums of Europe are now well supplied, have been mainly obtained from a few extensive collections of family papers, contained in sealed earthen jars, which were deposited in tombs. The largest store of such documents consists of papers accumulated by Ptolemy, son of Glaucias, a Macedonian recluse who resided in the Serapeum at Memphis during the reign of Ptolemy Philometer, and conducted an extensive correspondence on his own affairs and those of others with various departments of the Egyptian administration. Dispersed in the Museums of Paris, London, Turin, Rome, and Leyden, are nearly sixty papyri derived from this collection, all relating to the case of two orphan girls, twins, Thaues and Taous, who were attached to the service of the temple of Serapis, and received specified rations of loaves and oil in return for their services. The death of the bull Apis in the year 164 B.C. put a stop to these payments, which were not resumed till the next Apis was discovered. Hence the long series of documents and petitions connected with this suit, which terminated at the end of three months in favour of the twins by the payment of the arrears which they claimed. The writing is careless uncial,[1] exhibiting a tendency

[1] See col. iv. of the Table, and the facsimiles in Silvestre; or *Pal. Soc.*, plate i.

towards cursive forms in several of the letters. A progressive development of cursive forms[1] can be traced in a long series of similar documents from Egypt, extending almost uninterruptedly down to the time of the Arab conquest.[2] They consist of horoscopes, contracts, directions to officials, complaints of grievances, petitions for favours, manumissions of slaves, offers of rewards for the capture of fugitives, and papers connected with lawsuits, accompanied by the notes thereon of the official persons concerned. We have also an immense number of receipts for payments, often in barbarous Greek, scratched on potsherds. From this mass of documents, which may be compared with the contract tablets from Babylon and Nineveh, we obtain curious glimpses into the ordinary life of private persons in Egypt throughout the nine centuries, from the time of the 2nd Ptolemy to that of Omar, during which the Greek language and script prevailed in Egypt.

The Greek cursive being essentially adapted and used for writing on papyrus, a cheap and perishable material, our knowledge of it, derived from non-Egyptian sources, is naturally extremely limited, being

[1] See cols. v. and vi. of the Table.

[2] One of the latest is the will of Abraam, Bishop of Harmonthis, written near Thebes, probably in the 8th century. Here the letters are decidedly cursive. (*Pal. Soc.*, plate 107.) Compare a Papyrus Psalter, written at Thebes by an illiterate scribe in the 4th or 5th century, in which capital and cursive forms are curiously mingled. (*Pal. Soc.*, plate 38.)

almost confined to the scribblings of Greek gladiators on Pompeian walls, and certain subscriptions to documents from Ravenna and Naples which are assigned to the 6th and 7th centuries.

The careless irregular cursive in which most of the foregoing documents are written took a calligraphic form in the official script of the Byzantine chancery. Of this, unfortunately, only a single specimen is known, a precious document which goes by the name of the letter of Constantine V. to Pippin, King of the Franks.[1] Whether or no this attribution is correct, it doubtless belongs to the 8th century.

With the development of the Greek minuscule the old Greek cursive came to an end, surviving however, as we shall presently see, in many of the minuscule forms, and also in the Glagolitic alphabet of the Western Slaves, which, like the so-called Irish uncial, was only an uncialized cursive.[2]

The 9th century marks the new departure. The

[1] Facsimile in Montfaucon, *Pal. Gr.*, and in Mabillon, *De re dipl.*, repeated in Wattenbach's *Schrift-Tafeln*. See col. vi. of the Table.

[2] Of Greek tachygraphy little need be said. The examples which we possess, consisting chiefly of marginal notes and scholia, and of a Vatican MS. containing extracts from the book of Enoch and similar works, are of late date, probably not earlier than the 10th century, and seem to be imitations of the Roman tachygraphy. Some of the conventional signs survived in the abbreviations used in early Greek printed books. The existence of an earlier style may, however, be inferred from the assertion that Xenophon took down in short-hand the discourses of Socrates. The subject is fully discussed by Gardthausen, *Griechische Palaeographie*, book ii., chap. 4.

Uncial and the Cursive scripts disappeared, and a new minuscule, which had been for some time in process of formation out of both of the old scripts, became the book-hand of the future. The 8th century, the age of the Iconoclasts, had not been favourable to literature, the monks who followed calligraphy as a profession having suffered much at the hands of Leo the Isaurian. The old uncial had already assumed moribund and degraded forms, and with the literary revival of the 9th century it finally disappeared, and a new graphic development arose out of the old elements and new germs.

The transition to the minuscule forms is displayed in one of the most interesting documents which has come down to us from ancient times—a tattered and fragile sheet of papyrus now at Vienna, which was brought from Ravenna in 1553. This priceless fragment contains a few of the subscriptions of the bishops to the Acts of the Council of Constantinople in 680. These signatures, which are undoubtedly the original autographs, exhibit a curious juxtaposition of uncial and fully formed minuscule handwritings. Six of the bishops, evidently those who were most advanced in years,[1] use uncials, while seven of the younger prelates

[1] This inference is confirmed by the signature of Theognios, who states that by reason of his infirmity his subscription was penned by the hand of his deacon and steward, George, who writes in a bold and fully formed minuscule hand. Facsimile in Wattenbach, *Schrift-Tafeln*, plate 9. Cf. Gardthausen, *Beiträge z. Gr. Pal.*, plate 3.

employ the new minuscule. From a study of this document it is evident that the minuscule arose in the 7th century[1] as a cursive monastic script, more legible than the old cursive, and more rapidly written than the uncial, and constructed by a combination of the elements of both. It does not appear, however, to have come into use for books before the literary revival of the ninth century,[2] when it received a calligraphic development, and took its place as the fashionable book-hand, after the old uncial school of monkish calligraphers had died out.

For the detailed history of the Greek minuscule from the 9th century to the 15th the reader must be referred to works on Greek Palæography. The subject is too vast to be adequately treated here. The Greek minuscule may be conveniently divided into three stages;[3] the oldest, from the 7th to the 9th cen-

[1] The transition from cursive to minuscule can be first detected in the family papers of Aurelius Pachymius, dealer in purple, which range from 592 to 616 A.D.

[2] The Oxford Euclid of 888 (*Pal. Soc.*, plates 88, 89) has been usually regarded as the oldest minuscule codex. Gardthausen, however, has recently published a facsimile from a copy of the Gospels written by the monk Nicolaus in 835 at the monastery of St. Saba, near the Dead Sea, in a fully formed minuscule character. The uncial survived for some time in exceptional use, as appears from an Evangelistarium written by the priest Constantine so late as the year 995.

[3] Or into four, according to the division of Bast, which is usually followed: 1. Vetustissimi, sec. vii.–ix.; 2. Vetusti, sec. x.–xii.; 3. Recentiores, sec. xii., xiv.; 4. Novelli, sec. xv.

tury, is stiff, in the 10th and 11th centuries it reaches its perfection, after which it loses its uniformity, many uncial types reappearing, and the forms being modified by the use of ligatures and contractions, which make it difficult to read.

These stages are exhibited in the three last columns of the Table, which is only intended to exhibit broadly the historical sequence of the forms, and to explain the way in which the modern minuscule was formed out of the lapidary alphabet.

The most remarkable transformations are plainly due to the use of ligatures, as will be seen by an examination of the progressive changes in the uncial forms of the letters γ δ η ϑ μ ϖ σ.

A noteworthy peculiarity of the Greek minuscule is the existence of duplicate forms of certain letters.[1] The cause is not far to seek. The minuscule originated out of a combination of the uncial and cursive scripts, and hence uncial letters were used side by side with others derived from the cursive. Some of these duplicate forms, such as β and ϐ, π and ϖ, θ and ϑ, still survive, and others are commonly found in the older printed books. The prolonged survival of these variants, some of which can be traced back for more than a thousand years, illustrates the tenacity of life possessed by alphabetic forms, and testifies also to

[1] The Latin minuscule also contains duplicate forms, uncial and cursive, some of which have survived to our own days. Thus *t* and *s* can be traced back to the Latin uncials, *r* and ſ to the cursives.

the two-fold origin of the minuscule. The variant forms[1] still used may be classified as follows:—

Uncials,	ϐ	ſ	ζ	θ	π	ς	τ
Cursives,	β	γ	ȝ	ϑ	ϖ	σ	⅂

Of the letters which have only a single minuscule form, α ε κ λ ξ φ ω are of uncial origin, while δ η μ ν are cursives.[2] In several cases the uncial and cursive

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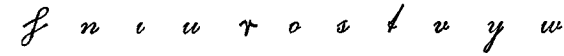
[1] Some of the duplicate forms were used indifferently according to the individual preferences of the scribe, others according to the convenience of position. Thus ϑ was preferred as an initial and medial form and θ as a final; π before vowels and ϖ before ρ; τ as an initial, and ⅂ after τ and π to prevent the confusion arising from the ligatures of ττ or πτ. The cursive form σ is now used as the medial, and the uncial ς as the final form of *sigma*, the uncial form Ϲ being now replaced as an initial by the cursive σ. This usage is not, however, uniformly observed in early MSS.

[2] Till the 14th century, duplicate forms, uncial and cursive, of several other letters were used. Thus of *epsilon* the cursive form is most usual till the 12th century, in the 13th the uncial Ⲉ begins to prevail, out of which the modern form ε was developed in the 15th. The uncial Ⲏ was not finally superseded by the cursive η before the 15th century. The forms of *mu* and *nu* influenced each other by assimilation. Of *mu* the cursive form μ is most usual till the 11th century, then the uncial Ⲙ is common till the 14th, and μ only became universal in the 15th. Till the 14th century the uncial *nu* ⲛ is used together with the cursive μ, out of which ν first arose in the 12th, and only becomes general in the 15th. The cursive *omega* ∞ is more usual till the 14th century, when it is replaced by ω. So also, for a long period, the modern uncial forms of κ λ φ contended with duplicate forms of cursive origin. Some of the uncial forms in the minuscule are not primitive, having been reintroduced at a comparatively late period.

forms are so much alike that the origin of the minuscules cannot precisely be determined.

The Greek types of the early printers were cut in imitation of the contractions and ligatures of the contemporary minuscule.[1] During the 17th century ligatures continued to be used for printed books; in the 18th they were gradually simplified, only a very few, such as ϛ for στ, ϐ for ου, ϙ for ος, and ϗ for και, surviving into the present century.

In the Neo-Hellenic, or Romaic script, the letters often resemble forms familiar in Western scripts; thus, for β ζ η ι κ ν ο σ τ υ ψ ω we have 

§ 4. LATIN UNCIALS AND MINUSCULES.

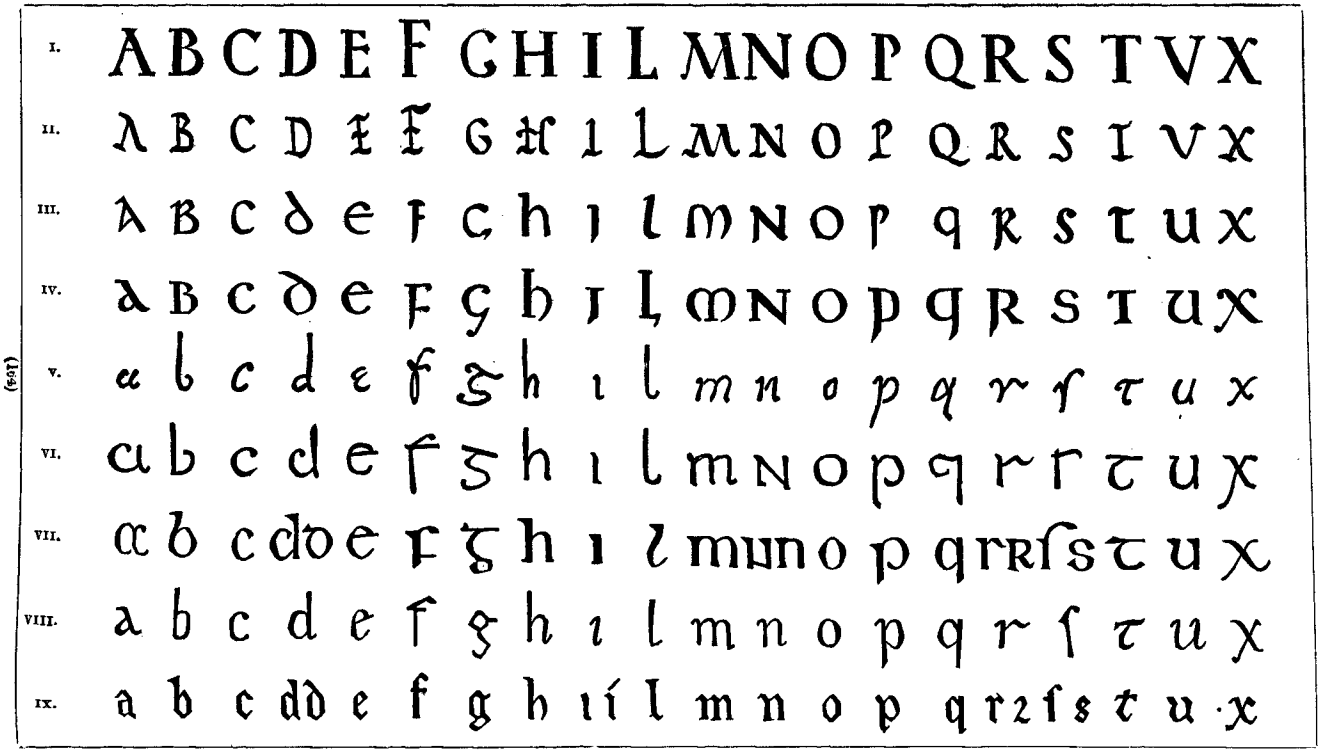
The Latin alphabets, like the Greek, are divided into four styles — Capitals, Uncials, Cursives, and Minuscules.

The earliest codices, especially the Virgils, are usually written in Capitals. There are two types, 'Square' and 'Rustic.' The Square Capitals resemble in their regularity and angularity the lapidary characters from which they were imitated. A good example is the St. Gall Virgil,[2] assigned to the 4th or 5th century,

[1] The most beautiful and complete founts of ligatured type are those cut by Garomond in 1544, 1546, and 1550, for Francis I. and Henry II.

[2] *Pal. Soc.*, pl. 208.

LATIN UNCIAL AND MINUSCULE.


I. A B C D E F G H I L M N O P Q R S T V X
II. A B C D E F G H I L M N O P Q R S I V X
III. A B C d e f g h i l m n o p q r s t u x
IV. a B c d e f g h i l m n o p q r s t u x
V. a b c d e f g h i l m n o p q r s t u x
VI. a b c d e f g h i l m n o p q r r t u x
VII. a b c d e f g h i l m n o p q r r s t u x
VIII. a b c d e f g h i l m n o p q r s t u x
IX. a b c dd e f g h i í l m n o p q r z s t u x

(691)

from which the first alphabet in the Table[1] on the opposite page is taken. The second alphabet[2] is an early example of the ornamental variety known by the name of Rustic or Negligent Capitals, which came into use in the 3rd or 4th century and continued in fashion till the 6th or 7th, and exceptionally till the 8th or 9th.

[1] This Table has been compiled to illustrate the stages in the evolution of Latin minuscule. The alphabets are from the facsimiles of cardinal MSS. published by the Palæographical Society. They are—

I. Square Capitals. Sec. iv. St. Gall Virgil.—*Pal. Soc.*, pl. 208.

II. Rustic Capitals. Sec. iii. Vatican Virgil, 'Codex Romanus.' —*Pal. Soc.*, pl. 113.

III. Early Roman Uncial. Sec. iii. Vatican palimpsest Cicero.—*Pal. Soc.*, pl. 160.

IV. Late Roman Uncial. Sec. vii. 'St. Augustine's Gospels' at Corpus Ch. Coll.—*Pal. Soc*, pl. 33.

V. Gallican Cursive. Sec. vi. Paris Avitus papyrus.—*Pal. Soc.*, pl. 68.

VI. Early Gallican Uncial. Sec. v. Hilary Codex at Rome.—*Pal. Soc.*, pl. 136.

VII. Irish Uncial. Sec. vii. 'Book of Kells' at Dublin.—*Pal. Soc.*, pl. 56.

VIII. Caroline Minuscule. Sec. ix. Boulogne Augustine.—*Pal. Soc.*, pl. 45.

IX. Early Black Letter. Sec. xiii., Abbot Robert's Bible in the British Museum.—*Pal. Soc.*, pl. 73.

[2] This is the celebrated 'Codex Romanus,' a Vatican Virgil, possibly of the 3rd century (*Pal. Soc.*, pl. 113). Of the same date and style is the 'Codex Palatinus,' also in the Vatican (*Pal. Soc.*, pl. 115). In later MSS. the 'rustic' characteristics are more pronounced. The Florence Virgil, the Vatican Terence, the Vatican Sallust, the Paris Prudentius, and the Utrecht Psalter may be taken as standard examples of this character.

It is angular, square, and irregular, formed of broken strokes, with circumflex finials, giving an intentional appearance of rudeness and carelessness.

The few Latin fragments which have been found among the Herculaneum rolls are also in capitals. They are not however free from cursive forms, and occasionally exhibit an approach towards a rounded uncial type, showing that the prevalent notion as to the regularity and purity of the oldest Latin script is due to the accident that early Latin books, written on papyrus, have mostly perished, those which have been preserved being the costly and permanent parchment codices which were written in the more careful book-hand of the period.

Capitals, even after they had been replaced by the later uncial and minuscule book-hands, continued to be employed for superscriptions, titles, and initials, a usage which has continued to our own times.

The development of uncial forms was later in Latin than in Greek, and may have been partly due to the influence of Greek example. Although an incipient tendency towards rounded forms may be detected in the Herculaneum rolls, the definite uncial script is not older than the 3rd century, and was hardly developed before the 4th. From the 6th century to the 9th the uncial was the ordinary book-hand used for Latin codices, gradually replacing the capitals, and being itself replaced by the minuscule.

The third alphabet in the Table exhibits the oldest

form of the Latin uncials. It is taken from a Palimpsest Cicero in the Vatican, which is assigned to the 3rd century.[1] The forms are still somewhat angular, as in the case of the letters *a*, *b*, and *r*. The full perfection of the uncial style is seen in the fourth alphabet, which is Roman uncial of the 7th century. This alphabet is taken from a book of unique literary interest, the venerable Codex now in the Library of Corpus Christi College at Cambridge, which goes by the name of "St. Augustine's Gospels," and may not improbably be the actual copy brought by St. Augustine from Rome when he was sent by Pope Gregory on his mission for the conversion of the Saxons.[2]

The Table shows better than any description the differences which distinguish uncials from capitals. There is a slight extension above or below the line of the letters *d h l f g p q*,[3] and occasionally of *r*, and a tendency in the direction of rounded forms, especially in the case of the test letters *m h u e d a*.[4]

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[1] *Pal. Soc.*, pl. 160. Cf. Thompson, *Utrecht Psalter*, p. 12.

[2] *Pal. Soc.*, pl. 33. The uncial development of *a d e g h* is to be noticed. Instructive examples of intermediate date are the Vienna Livy (*Pal. Soc.*, pl. 183) and the Milan Palimpsest Cicero (*Ib.*, pl. 112), both of the 5th century; the Paris Livy (*Ib.*, pl. 31, 32), the Ambrosian Gospels (*Ib.*, pl. 54), and the Paris Augustine (*Ib.*, pl. 42, 43), all of about the 6th century.

[3] The projection of the letters *f* and *l* beyond the line begins in the Capital Scripts.

[4] The characteristic uncial forms ℏ ɷ ϵ ᵾ were probably borrowed at some very early period from the old Roman cursive; the

The existence of an early Latin cursive has long been suspected, and is antecedently probable, since for ordinary correspondence the Romans could hardly have employed their lapidary script, which is quite unsuitable for rapid writing. Unfortunately we have no stores of Roman family papers, such as the Egyptian papyri from which the ancient Greek cursive script has been recovered. In some of the graffiti on the walls of Pompeian houses, and in a few of the inscriptions in the catacombs, irregular forms are used;[1] but all these examples seem to have been productions of illiterate persons, and it has been possible to attribute their peculiarities to the ignorance of the writers, or their want of graphic skill. A fortunate discovery made at Pompeii in 1875 has now placed the matter on a different footing, proving that, side by side with the capitals used for inscriptions and books, a cursive character, actually older than the uncial book-hand, and the source of some of its characteristic forms, was ordinarily employed by educated Romans for letters and business purposes. This invaluable 'find' consists of 132 wax tablets (*libelli*), carefully

intermediate forms 𐌃 ᴐ show the origin of ᗡ, and ᗅ seems also to have arisen out of the Capital.

[1] A similar character is employed on some wax tablets, assigned to the 2nd or 3rd century A.D., said to have been discovered about forty years ago in the disused workings of Roman goldmines in Transylvania. Their genuineness has been disputed, but is upheld by the high authority of Wattenbach. The similar Greek tablets purporting to be from the same workings are undoubtedly forgeries.

stored away in a box hidden in a recess over the portico of the house of L. Cæcilius Jucundus, who seems to have been by profession a factor or banker (*argentarius*). The documents consist of his business memoranda for the years 55 and 56 A.D. Some of them are receipts for taxes disbursed on behalf of his clients, but the greater number are notes of payments made by the argentarius on the purchasers' account to the vendors of goods sold by auction. The old Roman cursive, the existence and nature of which is thus established, is, as we shall presently see, of immense historical importance in explaining the origin of modern scripts, several of our own minuscule letters being actually traceable to the Pompeian forms.

Although no earlier examples of this script have been discovered, it must have been in use for nearly two centuries before the destruction of Pompeii, for thus only can we explain the statement of Suetonius that Julius Cæsar wrote *d* instead of *a*.[1] A confusion between the capital forms D and A would be impossible, but the cursive characters and might easily become undistinguishable.

The early Roman cursive, which is loose, irregular, scratchy, and difficult to read, was the precursor of the

[1] Suetonius i., 56. Compare what he says of the handwriting of Augustus (ii. 87, 88), and the advice of Quintilian as to the acquirement of the art of rapid writing. The discovery of cursive abecedaria, scratched on tiles, makes it probable that the cursive writing was regularly taught in schools.

more formal hand used in the rescripts of the Roman emperors, of which we have examples in papyrus fragments from Egypt, dating from the 5th century, and in documents from Italy of the 6th. A good instance is a deed of sale of property in Rimini, dated at Ravenna in 572 A.D.[1] As a book-hand it was probably confined to books written on papyrus, which, with two or three exceptions,[2] have all perished. It was the ordinary diplomatic hand of Italy and France till about the 9th century, when it was replaced by the Lombardic and Caroline minuscules which were themselves indirectly derived from it at an earlier stage of its history. It partially survived in the Imperial Chancery till the 13th century, when it had become so illegible that its further use was prohibited by the Emperor Frederick II.

The Roman shorthand, usually called *Notæ Tironianæ*, took its name from Cicero's freedman and amanuensis, M. Tullius Tiro, by whom it is said, on somewhat doubtful authority, to have been invented or improved for the purpose of taking down his master's speeches. There is no doubt, however, that the Romans were acquainted with some system of steno-

[1] *Pal. Soc.*, pl. 2 and 28. The forms of the letters in this document are valuable in explaining the origin of mediæval scripts. Thus we find a great resemblance to the modern cursive forms of the letters *c d f h l m n q r u*. The letter *a* is open like *u*, *b* is b, and for *s* we have ſ, which was the parent of the long f afterwards so common.

[2] See p. 176, *infra*.

graphy in the time of Martial. The Tironian notes, as found in manuscripts dating from the 6th to the 11th century, bear considerable resemblance to some modern systems of shorthand, and have been the subject of a copious literature.[1] Cursive forms of the letters, which could be rapidly written, were employed in conjunction with about 500 arbitrary signs. Many of these were conventional abbreviations, such as E. for *equidem*, T. for *tempus*, H. for *homo*, S. for *sæpe*, SC. for *schola*, the rest being stenographic signs for the common prefixes and suffixes, and for words of frequent occurrence. These signs were constructed on a regular system, which rendered them easy to remember, as will be seen by a few examples. Thus we have / *it*, ⌇ *tam*, ⌇ *tat*, ⌇ *tatium*, — *tatem*, 7 *tus*, ⌉ *entis*, ⌉ *entibus*, ∨ *etur*, ⌊ *imus*, ✓ *iis*, ✓ *remus*.

With the establishment of the Teutonic kingdoms on the ruins of the Roman empire a variety of national scripts arose. Hitherto there had been two concurrent scripts, the book-hand and the business hand, the first aiming at being easy to read, the second at being easy to write. This distinction still continued. In the monasteries, where the traditions of the Roman culture survived, the uncial writing was used for books, while charters and other civil documents were written in a character based on the Roman cursive, in combination

[1] See Ruess, *Ueber die Tachygraphie der Römer*. München, 1879. Cf. Wattenbach, *Anleitung*, pp. 7—10.

with a few uncial forms. Out of these elements the Merovingian script arose in Gaul, the Lombardic in Italy, and the Visigothic in Spain. The Merovingian, which is chiefly known from 8th century charters, is difficult to read, the letters being narrow, tall, and interlaced. It never grew into a calligraphic script, its development having been cut short by the Caroline reform. The 'Lombardic' was not confined to the Lombards, but is merely the name given to the mediæval script of Italy. At first it resembles the early Merovingian, and became the source of the singular hand used for Bulls written in the Papal Chancery. Owing probably to the influence of the Irish monks of Bobbio, the Lombardic received a calligraphic development, and becoming assimilated to the Caroline minuscule, was cultivated in the monasteries of La Cava and Monte Casino, reaching its greatest excellence in the 11th century. The Visigothic passed through similar stages, beginning as a rude cursive, and afterwards being transformed into a set minuscule.[1]

The Irish, by far the most important of the national scripts, stands on a different footing from the rest, and presents a problem of considerable perplexity. In Spain, Italy, and Gaul, the Roman civilization not having been destroyed by the inroads of the barbarians, the

[1] For examples of the Lombardic, Visigothic and Merovingian, see the numerous references in Wattenbach, *Anleitung z. lat. Pal.* Cf. *Pal. Soc.*, plates 8, 9, 48, 92, 119, 120, 184, 185.

Roman secular hand survived, the Merovingian and other national scripts of the continent being merely continuations of the Roman cursive. But in Ireland, which was never subjected to the civil supremacy of Rome, and in Britain, where the Roman culture was effaced and the Roman municipal organization was uprooted by the Teutonic conquest, the conditions were different. When, in the 6th century, we first make acquaintance with the Irish script, it appears as a beautiful and fully formed book-hand, resembling the uncial scripts of the continent in its regularity and its rounded forms, but differing from them essentially in the structure of many of the letters. It is usually called the Irish uncial or semiuncial, but its connection with the normal uncial script has never been explained.

Its history is obscure. No Irish hand is known out of which it could have arisen. And yet in the 6th century Ireland suddenly becomes the chief school of Western calligraphy, and the so-called Irish uncial blazes forth in full splendour as the most magnificent of all mediæval scripts. Only one conclusion seems possible. Some time in the 5th century a fully formed book-hand must have been introduced by St. Patrick, (432–458 A.D.), doubtless from Gaul, where he received his consecration.[1] And this must have been cultivated as a calligraphic script in the Irish monasteries, which at this time enjoyed comparative immunity from the

[1] See Skene, *Celtic Scotland*, ii., pp. 428 to 431.

ravages of the Teutonic invaders, who in the 5th century desolated Italy, Gaul, and Spain.

Its parentage remains to be investigated. It is usually assumed that it originated in some unknown way out of the ordinary uncial. This hypothesis is inadmissible, the structure of many letters being altogether different. It is plain that the Irish forms of *g b a m* cannot have arisen out of the Roman uncial,[1] and it is the same with *d n r s*, though in these cases the Irish has incorporated duplicate forms from the 6th century uncial in addition to others which are characteristic of the script, and which cannot be of uncial origin.

The solution of the problem seems to be that, under the common name of uncial, two scripts of wholly different origin have been confounded. The Roman uncial was mainly derived from the capitals; the so-called Irish uncial was evolved, probably in the South of France, from the local 5th century cursive, incorporating a few duplicate uncial forms. Thus the resemblance between the two is merely superficial; both are bold and rounded calligraphic book-hands, but in the structure of the letters, which is the essential point, they are wholly different. The evidence for these conclusions, though not copious, seems to be sufficient.

The first link in the chain of proof is a copy of a

[1] Compare the 4th and 7th alphabets on p. 164, which represent contemporary forms of the Roman uncial and the Irish.

treatise against the Arians by St. Hilary, Bishop of Poictiers (353–368 A.D.) The alphabet of this codex, which is now in the archives of St. Peter's at Rome, is decisively of the Irish type, exhibiting nine of the ten Irish test forms.[1] The theory that it was written in Italy under Irish influence is inadmissible, for at p. 288 of the manuscript there is a note in a cursive hand stating that it was collated and revised 'aput Karalis' in the 14th year of Trasamund, King of the Vandals. The Vandal kingdom in Africa lasted from 429 to 534. Trasamund reigned from 496 to 523, and hence the date of the collation must be 509 A.D. Caralis, where the collation took place, is Cagliari in Sardinia, which was annexed to the Vandal kingdom in the year 456. The manuscript is doubtless older than the collation, and may be assigned to the 5th century.[2] The monastery of Bobbio, from whence the influence of the Irish calligraphic school penetrated into Italy, was only founded by Columbanus in 612 A.D., a full century after the collation of the codex in Sardinia. The chronological and geographical conditions therefore indicate that this manuscript, instead of being due to the influence of Irish monks in Italy, must itself represent

[1] The alphabet is No. 6 on p. 164 (*Palæographical Society*, pl. 136). The forms of the letters *a b d f g m p r s t* should be noticed.

[2] The ravages of the Vandals in Gaul in the early part of the 5th century may perhaps explain the presence of the work of a Gallican Bishop among the Vandals.

the source from which St. Patrick, in the 5th century, obtained the Irish uncial.[1]

We have now to seek for the source of the alphabet of the Hilary Codex. This is supplied by fifteen sheets of papyrus,[2] now in the Bibliothèque Nationale at Paris, containing portions of the letters and homilies of St. Avitus, who was Archbishop of Vienne about 520 A.D. This manuscript, doubtless of the 6th century, is written in a cursive hand, intermediate between the old Roman cursive, as represented by the Ravenna papyrus (p. 170) and the Merovingian, which grew out of it in Gaul. It seems to have been the ecclesiastical cursive of the 6th century, and its nearly unique character may be explained by the fact that, owing to their fragility, manuscripts written on papyrus have mostly perished.[3]

We can now trace the affiliation of the Irish forms. The 5th alphabet on p. 164 is that of the Avitus

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[1] A copy of the Sermons of St. Severianus, ascribed to the 6th century, now in the Ambrosian Library at Milan (*Pal. Soc.*, pl. 161, 162), is written in the same alphabet as the Hilary Codex, and must also represent the Gallican script, which was the parent of the Irish uncial. It has all the Irish test forms, some of which are also found in two 6th century codices written near Lyons, the Codex Bezæ and the Codex Claromontanus. But the Hilary Codex affords the most decisive evidence on account of its definite and early date.

[2] For facsimile, see *Pal. Soc.*, pl. 68.

[3] There is another example in a papyrus containing the Latin translation of Josephus by Rufinus, which is now in the Ambrosian Library at Milan. It is assigned to the 7th century. *Pal. Soc.*, pl. 59.

papyrus, the 6th is that of the Hilary Codex, and the 7th is that of the Book of Kells, a manuscript written in Ireland in the 7th century, which is regarded as the typical specimen of the Irish uncial.[1] It will be seen that the cursive writing of Southern Gaul supplies unmistakeable prototypes for all the Irish test forms[2] which, on the other hand, by no process of palæographical evolution can be obtained from the contemporary Roman uncial.[3] The peculiar Irish letters are manifestly merely the cursive characters of the Avitus papyrus,[4]

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[1] This beautiful Codex, now in Dublin, originally belonged to the monastery of Kells in Meath. Its date is arrived at by comparison with 'St. Cuthbert's Gospels,' now at Durham, which were written by Eadfrith, who was Bishop of Lindisfarne from 698 to 721. (*Pal. Soc.*, pl. 3.) The writing is of the pure Irish type, as is that of 'St. Chad's Gospels' at Lichfield, c. 700 A.D. (*Pal. Soc.*, pl. 20), and the 'Rushworth Gospels' at Oxford, which were written by Mac Regol in Ireland about 800 A.D. Of these codices St. Cuthbert's Gospels are of special palæographic value, since their definite date affords a standard of comparison by which the age of similar manuscripts can be approximately ascertained.

[2] Notice especially the peculiar flat-headed *g*, the *b* with one loop, the upright *d*, the cursive *n* and *r*, and the long *s*, as well as the important but less decisive forms of *a f h m t*. The duplicate forms of *d n r s*, which are plainly borrowed from the uncial, must be excluded from the comparison.

[3] As seen in 'St. Augustine's Gospels,' given in the fourth alphabet on page 164, or in the Venerable Bede's copy of the Acts, now in the Bodleian, which was written in Sardinia in the 7th century.

[4] Nearly the same forms are found in the Ravenna papyrus of 572 A.D. (p. 170), and some of them, such as *d*, *r* and *f*, can even be traced back to the Pompeian wax tablets (p. 169).

regularized and reduced to a calligraphic book-hand of uncial style. The Roman uncials are rounded capitals; the Irish uncials are uncialized cursives. The first are the result of deformation, the second of reformation.

The great length at which the origin of the Irish uncial has been discussed must be justified not only on account of the obscurity of its history, but because of the profound influence which it exercised on the later alphabets of Europe. About the beginning of the 7th century the Irish monks founded monasteries in Germany, Switzerland, Gaul, and Italy, and their style of ornamentation,[1] and their unmistakeable alphabet,[2] may henceforth be traced throughout the calligraphic schools of the continent.

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[1] Many of the great Irish codices, such as the 'Book of Kells,' or the so-called 'Missal of St. Columba,' are beautifully ornamented in colours, and exhibit fantastic and intricate initials, often of a highly artistic character.

[2] Another Irish script, the Ogham, derived indirectly from the Runes, will be presently described. The alphabet now used in Irish printed books is an angular cursive minuscule, evolved out of the Irish uncial, or semi-uncial, as it is often called. The term semi-uncial or half-uncial, frequently applied to the mediæval Irish script, has been defined as "an uncial character with minuscule forms." These 'minuscule' forms being really of cursive origin, the term semi-uncial involves the mistaken notion that the minuscule arose out of the uncial and not out of the cursive. Such a misleading term should therefore be used with caution. 'Roman uncial' and 'Irish uncial' are names less likely to lead to error than 'uncial' and 'semi-uncial.'

The Anglo Saxons acquired the art of writing partly from the Roman Missionaries and partly from the Irish. Hence the Anglo-Saxon script exhibits a combination of the two great calligraphic schools, the Irish and the Roman. One style originally prevailed in Wessex and Kent, the other in Mercia and Northumberland. Of the Southern school an early example is 'St. Augustine's Psalter,' now in the British Museum,[1] which is proved by the style of ornament to have been written in England, but in an alphabet almost identical with that of 'St. Augustine's Gospels' at Cambridge, which were undoubtedly written on the continent.[2] To the Northern or Irish school we may refer 'St. Cuthbert's Gospels' at Durham, or 'St. Chad's Gospels' at Lichfield.[3]

The Anglo-Saxon, like the Irish, gradually developed into a minuscule, incorporating the Runes *wen* ƿ (*w*) and *thorn* þ (*th*), the latter of which maintains a struggling existence, being still used by old-fashioned persons, who write yᵉ for 'the,' little thinking, probably, that they are employing the survival of a Scandinavian rune which the Goths, before they left their early home on the Baltic, had obtained from the Greek colonies on the Euxine, centuries before the commencement of the Christian era. It proves ultimately to be derived from the Greek *delta*, which, after making the round of Europe by the Northern seas, rejoined in England the

[1] *Pal. Soc.*, pl. 18. [2] *Ib.*, pl. 33. [3] See p. 177, note.

other letters of the Greek alphabet, which had come by the Mediterranean route.

The Icelandic, in which the Sagas have been conserved, was derived from the Northumbrian or Irish alphabet, from which it does not greatly differ.

The chief importance, however, of the northern type of the Anglo-Saxon script arises from its having been the precursor of the Caroline minuscule, and therefore the parent of the so-called Roman alphabet in which our books are printed. The Caroline reform, the last important stage in the evolution of our alphabet, has now to be described.

In the West, as in the East, the 9th century is marked by a new graphic departure. In the East it was a consequence of the literary reaction which followed the age of the Iconoclasts; in the West it was due to the cosmopolitan culture introduced with the Carlovingian empire. The reform of the Western scripts, which had been for some time impending, was accelerated by the foundation in the Abbey of St. Martin at Tours (796 to 809 A.D.) of the celebrated school established by Alcuin of York, the friend and preceptor of Charlemagne. Alcuin's literary eminence, his Northumbrian training, his residence in Italy, and his position at the Court of Charlemagne, had made him acquainted with the traditions of the best calligraphic schools of Europe, and gave him the influence necessary for securing the adoption of his reforms. The new script, though obtained mainly from the rounded English book-hand

of the 8th century[1] with which Alcuin must have been familiar during his earlier years at York, incorporated elements derived from the Lombardic minuscule, the Roman uncial, and possibly from the Merovingian cursive. Owing to its manifold excellencies, such as the rapidity with which it could be written, the ease with which it could be read, and economy of parchment, the Caroline minuscule,[2] as it is usually called, grew rapidly in favour, and, being diffused by Alcuin's pupils over Europe, displaced the older majuscule scripts—the monastic uncials, as well as the secular cursives. About the end of the 11th century or the beginning of the 12th it reached its greatest perfection. Before the close of the 12th century deformation had set in—the letters are formed with less care, the ink deteriorates in quality, and the strokes grow thicker. In the 13th century the writing becomes more angular,[3] developing, in the 14th century, into the cross-barred (*gitterformig*)

[1] Seen in the Winchester Prayers (*Pal. Soc.*, pl. 163), or in the Commentary on the Psalms by Cassiodorus, now at Durham, a book which tradition states to have been penned by the hand of the Venerable Bede himself. (*Pal. Soc.*, pl. 164.)

[2] The eighth alphabet on p. 164 is from a very early example of the Caroline minuscule. This is a copy of the Retractations of St. Augustine, written in the abbey of St. Bertin at St. Omer during the abbacy of Nantharius II., 804 to 820 (*Pal. Soc.*, pl. 45). Compare the Psalter given by Louis le Debonnaire in 825 to the abbey of St. Hubert in the Ardennes (*Pal. Soc.*, pl. 69).

[3] As in the ninth alphabet on p. 164, which is taken from the Bible written for Robert, Abbot of St. Augustine's at Canterbury, 1225 to 1252 A.D. (*Pal. Soc.*, pl. 73, 74).

script which goes by the name of Black letter, or Gothic.[1] This became so coarse and illegible, that with the revival of learning and better taste in the 15th century it was generally abandoned by the Italian scholars, who returned to the beautiful minuscule of the 11th century.

The reform had not extended to Germany, when, in the middle of the 15th century, the art of printing with moveable types[2] was discovered by Gutenberg of Mainz. The first printers being Germans, they naturally imitated the Black letter of the monkish missals then locally in fashion, and these barbarous forms—such is the power of that most conservative of institu-

[1] The development of the Black letter can be traced in the series of fourteen dated examples, from 1176 to 1445, published by the Palæographical Society (plates 37, 73, 196 to 200, 75, 221 to 226).

[2] In the 14th century engraved wooden blocks were used to print playing cards and sacred pictures. The next step was to engrave a few words below the picture, as in the case of the St. Christopher, with two lines of legend, dated in 1423. The revolution effected by Gutenberg consisted not so much in his discovery of the printing press as in his subsequent invention of moveable types, which were first cut in intaglio, and then cast in metal from the wooden matrix. Without these types his enterprise of printing the great folio Bible, completed in 1455, would have been impracticable. Moveable types have, however, been repeatedly invented. They were probably used for Babylonian and Assyrian seals, and were undoubtedly employed long before the Christian era by the potters of Thasos, as is proved by the occasional inversion of letters in the potters' marks. They were again invented in China in the 10th century A.D., and were also used about the same time for stamping the legends on the coins of Tibet.

tions, a printing office—are still essentially retained in German books.

When the art of printing was carried south of the Alps by the German monks of Subiaco they took with them their Black-letter types, but soon found it desirable to conform to the requirements of the Italian book-market by an imitation of the finer forms of the older minuscule which had come into fashion among the Italian scribes. The Lactantius printed at Subiaco in 1465, for which the types were cut by Sweinheim, is the first book in which an approach to the rounded Roman forms is seen.[1] Two years later, in 1467, Sweinheim printed at Rome, with greatly improved types, the Epistles of Cicero. In 1470 these Roman types, as they were called from the place where they were first adopted, were brought to Paris and used at the Sorbonne for the first book printed in France.

The earliest English books were printed with Black-letter types brought by Caxton from Bruges (1471 to 1477), and it was not till fifty years after their introduction into France that 'Roman' types, probably brought from Paris by Pynson, were used in London. It is interesting to note that the first book printed in

[1] Aldus Manutius, in his Virgil printed at Venice in 1501, introduced the semi-cursive type which from him has received the name of 'Aldine,' and was the precursor of the 'Italic' type now used by printers. The original fount of 'Aldine' type is said to have been cut by Francesco da Bologna, better known as Francia, in imitation of the beautiful Italian hand of Petrarch.

England with the Roman letter was the Treatise by Henry VIII., on account of which the Pope bestowed on him the title of Defender of the Faith, still retained by English sovereigns on their coins. It was probably in deference to the Italian taste that Roman types were obtained for a book intended as a compliment to the Pope. The fashion thus set by the King prevailed, the Black letter which had established itself in English printing offices giving place to the Roman character. We may well be thankful for this fortunate accident, but for which, in the typographic demarcation which henceforth divided Europe, England might have finally cast in her lot with the other Teutonic lands, Germany, Holland, and Denmark, which still adhere to the Black letter, instead, as is happily the case, with the Latin races, French, Spanish, and Italian.

The manifold advantages of the Roman type become manifest if we compare it with the improved Black letter still used in Germany, which is not only less beautiful and less compact, but much more ambiguous and more fatiguing to the eyes.[1] The superiority of the Roman forms will at once be recognized if we compare the perplexing similarity of the German capitals 𝔈 𝔈 𝔊 𝔖 with the distinctness of their Roman equivalents C E G S; or again, if we compare 𝔙 𝔙 with B V; 𝔍 𝔉 with I F; or, among the

[1] The frequency of the use of spectacles among young men in Germany, as compared with England, France, or Italy, is believed to be due in great part to the more trying nature of German type.

minuscules, r ɾ with r x, ſ f with s f, ƕ ꝩ with h y, ꝺ a o c e with d a o c e, or i t l with i t l.

The tenacity with which the Teutonic nations on the one hand, and the Latin races on the other, have adhered to those forms of the letters which chanced to be adopted in the first printed books, illustrates one of the chief results of the invention of printing. The introduction of cast metal types, by arresting the ceaseless process of alphabetic evolution, has proved to be the most important event in the History of the Alphabet. The tendency has been and is towards the establishment of a single stable and uniform alphabet among all civilized nations. What this alphabet will be there can be little doubt. In England, France, Spain, Italy, America, and Australia, all other alphabets have been replaced by the 11th century minuscule, which, as a book-hand, has probably never been surpassed, and which, in spite of a few imperfections,[1]

[1] Proposals for the improvement of our alphabet have frequently been brought forward, but it may be doubted whether they have any great chances of success. The fact that a single alphabet prevails over such vast regions, the practical conveniences of such uniformity the difficulty of effecting any change, the immense literature which it conserves, the enormous capital invested in printer's type, the substantial excellence of our present alphabet, and the small amount of actual inconvenience occasioned by its defects, may well lead us to question the desirability as well as the practicability of attempting any improvement. It cannot be denied that such an alphabet as the Phonotype, proposed by Mr. Pitman, has some theoretic advantages over our present alphabet, but it may be doubted whether the difficulties and inconveniences attending a substitution, allowing it

theoretical rather than practical, is likely to remain the alphabet of the future, and to extend its sway among those nations which have not yet adopted it. The Roman alphabet is constantly extending its range; books in Asiatic languages are now not unfrequently printed in Roman type, it is increasingly used for the barbarous languages of Africa, it may very possibly be adopted in Japan, the Germans are year by year replacing their Black letter by the superior Roman forms, and their adoption in Russia is probably only a question of time.

The evolution of our modern minuscule forms is amply discussed in Wattenbach's *Anleitung*, so that a mere summary of results may here suffice.

From the Table on p. 164 it will be seen that the letters b d f h l m n r are the old Roman cur-

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to be practicable, do not outweigh any possible gains. For the blind, however, Mr. Moon's embossed alphabet, with its ingeniously simplified forms of the letters, leaves little to be desired. Of the scientific alphabets, which are absolutely required for the study of dialects, and for the exact representation of the sounds of barbarous languages, the 'Standard Alphabet' invented by Professor Lepsius taxes too severely the resources of printers, an objection which does not apply to the 'Palæotype' and 'Glossic' of Mr. Ellis, which are more convenient than Professor Max Müller's 'Missionary Alphabet,' and easier to learn as well as more complete than the 'Romic' of Mr. Sweet. Prince L. L. Bonaparte has catalogued 385 possible sounds, some however actually occurring in no known language, which would have to be represented by separate symbols in a complete scientific alphabet. On the merits of scientific alphabets, see Sayce, *Science of Language*, vol. i., p. 329.

sives, transmitted from Gaul to Ireland in the 5th century, thence to England in the 7th, and adopted into the Caroline minuscule in the 9th.

Of these letters none have undergone more complete transformation than d and r, the loop of D having been transferred to the other side of the vertical stroke, while the loop and tail of R have undergone almost complete atrophy.[1]

In the long *s*, (ſ) which is a very ancient cursive form, the tick to the left is a survival of the lower curve of S, as is shown by the transition forms ϒ and ȷ. The capital form S reappears as a variant in the Irish uncial, but ſ is almost universal in the early Caroline minuscule. In the 10th century S begins to creep into use as a final form, and in the 12th gradually becomes more common. The first French printed book (1470) has only ſ, the second (1471) has S final. The long ſ, probably on account of its inconvenient resemblance to f, has disappeared from printed books, lingering, however, in the ancient ligature ſt. The modern cursive *s* arose out of the Black letter ſ. The German character ß and the common manuscript ligature *ſs* combine both forms.

The characters c e o p q u are common both to the

[1] The stages of the process can easily be traced. In the Herculaneum rolls we find the form ꭰ, from this we easily get ꝺ, which passed from the Pompeian cursive into the 3rd century Roman uncial, and affords an easy transition to the 5th century cursive form d. In like manner r came through ɾ and R from R.

uncial and cursive scripts, while v x z are comparatively late reintroductions of capital forms. In the earlier minuscule we find z, which, to avoid confusion with ȝ, a rounded form of *r* called *r rotunda*, gave place to ꝛ or ʒ, a form surviving in the *cedilla* (ç) which is a 'little *zed*,' as the name implies.[1]

The forms of most recent origin are a g k t y w i j. The minuscule *a* was at first ⍺ or ɑ, but as early as the 10th century the top was bent round, a, in order to avoid confusion with d, the curve being prolonged in the Black letter 𝔞 so as to form a complete loop.

Similarly, in the case of *g*, the lower loop of the Irish ȝ was completed, giving the Anglo-Saxon ȝ, and then in the Lombardic and Caroline minuscule the flat bar, a vestige of which survives in the little crook at the top of the Roman g and the Black letter 𝔤, was curved downwards so as to form a second loop.

The original minuscule form of *t* was ꞇ, which is retained in French and Italian handwritings. The blotted 𝔱 of modern printed books is a very curious survival, proving that the letter was not crossed after being formed as in the Italic *t*, but that as in the case of its prototype ꞇ the horizontal bar was made first, and the vertical stroke then formed without the pen being taken off the paper. The head of the letter does not appear above the cross-bar before the early

[1] Cf. the Italian *zediglia*, from the diminutive *zeticula*.

Black letter of the 12th century,[1] the new form being apparently suggested by the Caroline ligature ſt.

The letter y is late, dating only from the 12th century, and so is k, which seems to be a form of Lombardic origin.

For *w* the Anglo-Saxons used the *wen* rune, ƿ, which was at first replaced by vu. In the 11th century we find uu as well as vv, which was afterwards written ⩔ or w, showing that it was originally not a letter, but a mere ligature, like ff æ ſh ſt ſl.

The specialization of v and u, and of j and i, to denote the consonantal and vocalic sounds, has already been mentioned by anticipation in order to explain the formation of the new letters in the Greek Alphabet (p. 72). Originally v was the capital form, and u the uncial and cursive. In the 10th century minuscule we find the capital form used by preference as the initial, and u as the medial. The consonant being more common at the beginning of Latin words, and the vowel in the middle, the initial form seems to have been gradually appropriated as the symbol of the consonant, and the medial form as that of the vowel. Similarly, in the 15th century, the forms j and i, which were originally only initial and medial forms of the same letter, became specialized to denote the consonant and the vowel. The dot over the j is a curious survival. It is now useless as a diacritical mark, which it originally was,

[1] The earliest instance of t which I have been able to find is in the Rule of St. Benet, written at Nîmes in 1129.

but remains as a witness not only that j was obtained from i by differentiation, but also that the practice of dotting the i is older than the evolution of j.

The form ı is old, but the dot is late[1] and only came gradually into use. As early as the 11th century *i* was conveniently distinguished by an accent[2] when doubled, or in juxtaposition with *u*. Thus we have íí uí and íu. In the 12th century the accent is occasionally added when *i* is combined with other letters, especially with *m* and *n*, but it only became universal when the invention of printing made it inconvenient to retain both forms. Thus in the earliest specimen of French typography (1470) we have ıd without the accent, which is used for the first *i* of níhıl because it comes next to *n*. In the 14th century the accent over the *i* begins to change into a dot, the earliest occurrence of i instead of í being in a manuscript dated in 1327.

The differences in the handwriting of European nations date from a remote period. The forms of the modern German cursive go back to those of the Imperial Chancery, which were based on the Merovingian cursive. Our English script is based on the Court-hand

[1] As is proved by the fact that the capital ı, a more archaic form, has no dot.

[2] The *comma* (,) originally a hair-line, as the name implies, arose out of /, the mark of a pause. The full stop, originally called the *colon*, was (·), which, united with the comma, gave the semi-colon (;). A moderate pause was originally denoted by (˙.), which, united with (·), gave our modern colon (:).

which arose out of the degraded Caroline minuscule, greatly influenced, however, by the Italian fashions which prevailed in the Elizabethan age. It has been modified, as is easy to see, by the use of ligatures, which explain the growth of such forms as out of b p g f, the tendency being to form tails to the right, just as in Semitic scripts they are formed to the left.[1]

§ 5. COPTIC.

Having traced the history of the various Western alphabets which were derived from the Latin, we have now, in like manner, to investigate the origin of the national Eastern alphabets which arose out of the Greek scripts, uncial and cursive.

Among the causes which determined the distribution of mediæval alphabets were the partition of the Empire into two dominions, Eastern and Western; the schisms which divided the Church into three great communions, Catholic, Orthodox, and Jacobite; and the missionary zeal which carried the Latin alphabet to Poland, the Syriac to Tartary, and the Greek to Russia.

Of the national alphabets which arose out of the Greek uncial, the Coptic is the earliest in date. It is the vehicle of the Coptic language, which though no longer vernacular, is still in liturgical use among the

[1] See vol. i., pp. 262, 266, 289.

Copts, who are the remnant of the Egyptian Church. They are less than 150,000 in number, and possess about 130 churches or monasteries. They have not only retained their original alphabet and liturgies, but preserve a most ancient ritual, and a very primitive arrangement of their churches. The Coptic language is the speech of ancient Egypt corrupted with Semitic and Greek idioms. It probably represents the Egyptian vernacular of the Roman period. It began to give place to Arabic in the 9th century, maintaining a struggling existence till the 17th.[1] It is now little if at all understood even by the priests, who have to use it in the services of the Church. The Service books, which are mostly in manuscript, are written in Coptic, with Arabic rubrics. The printed books usually have the Coptic prayers on the one side with an Arabic translation on the other. Coptic is used exclusively for that part of the ritual which is conducted within the Sanctuary, other portions of the Service being read first in Coptic and afterwards in Arabic.

This retention of the ancient language, script and ritual, was due not only to the Oriental dislike of change, and to the conservatism inherited by the Copts from their lineal ancestors, the old Egyptians, but in no small degree to their adherence to the Monophysite heresy, which practically denied the human nature of our Lord. At the Council of Chalcedon, in 451, the

[1] An old man who spoke Coptic died as lately as 1633.

Coptic patriarch and six of his bishops took part with Eutychus, and in the following century the Copts finally cast in their lot with the Jacobites, and were thus cut off from communion with the Byzantine Church. Owing to this isolation the Coptic alphabet preserves almost unchanged the type which was in use at the time of the schism. On the conversion of Egypt to Christianity, the Demotic script was supplanted for ecclesiastical use by the Greek uncial, as for secular purposes it had already been by the Greek cursive, six or seven letters being borrowed from the Demotic in order to express Coptic sounds not found in Greek. Hence the Coptic retains the forms of the Alexandrian uncial of the 4th or 5th century.

The Service books used in the Coptic churches are seldom older then the 16th century, but there are a few which are believed to date from the 5th or 6th. One of the oldest, which is now in the Vatican Library at Rome, contains a portion of the Gospel of St. John, with the Coptic and Greek versions in parallel columns. With the exception of the Demotic characters the forms of the letters in the Coptic version are exactly the same as the square uncials in the Greek text.[1]

In the accompanying table the Coptic alphabet, as used in modern printed books, is given side by side

[1] Silvestre, *Pal. Universelle*, pl. 2, no. 2, and Madden's text, vol. i., p. 125. Silvestre's plate also contains a selection of Coptic texts ranging from the 5th to the 10th century, showing the development of the script. Cf. Montfaucon, *Pal. Gr.* p. 312.

THE COPTIC ALPHABET.

	Names.	Values.	Coptic.	Greek Uncials.		Names.	Values.	Coptic.	Greek Uncials.
1	Alpha	*a*	ⲁ Ⲁ	Α	17	Pi	*p, b*	ⲡ Ⲡ	Π
2	Vida	*b, v*	ⲃ Ⲃ	Β	18	Ro	*r*	ⲣ Ⲣ	Ρ
3	Gamma	*g*	ⲅ Ⲅ	Γ	19	Sima	*s*	ⲥ Ⲥ	C
4	Dalda	*d*	ⲇ Ⲇ	Δ	20	Tau	*t, d*	ⲧ Ⲧ	Τ
5	Ei	*e*	ⲉ Ⲉ	Ε	21	He	*ü*	ⲩ Ⲩ	Υ
6	So	6	ⲋ Ⲋ	Ϛ	22	Phi	*ph*	ⲫ Ⲫ	Φ
7	Zita	*dz*	ⲍ Ⲍ	Ζ	23	Khi	*kh*	ⲭ Ⲭ	Χ
8	Ita	*e, ī*	ⲏ Ⲏ	Η	24	Psi	*ps*	ⲯ Ⲯ	Ψ
9	Thita	*th*	ⲑ Ⲑ	Θ	25	Au	*ū, ō*	ⲱ Ⲱ	Ω
10	Jauta	*i*	ⲓ Ⲓ	Ι	26	Shei	*sh*	ⲱ Ⲱ	
11	Kapa	*k*	ⲕ Ⲕ	Κ	27	Fei	*f*	ⲫ Ⲫ	
12	Laula	*l*	ⲗ Ⲗ	Λ	28	Chei	*ch*	ⲭ Ⲭ	
13	Mi	*m*	ⲙ Ⲙ	Μ	29	Hori	*h*	ⲏ Ⲏ	
14	Ni	*n*	ⲛ Ⲛ	Ν	30	Janjia	*j g,dzh*	ⲍ Ⲍ	
15	Ksi	*ks*	ⲝ Ⲝ	Ξ	31	Tshima	*tsh*	ⲋ Ⲋ	
16	O	*o*	ⲟ Ⲟ	Ο	32	Ti	*ti*	ⲧ Ⲧ	

AFFILIATION OF THE DEMOTIC CHARACTERS IN COPTIC.

Names.	Values.	Hieroglyphic.	Hieratic.	Demotic.	Coptic.	Names.	Values.	Hieroglyphic.	Hieratic.	Demotic.	Coptic.
Shei	*sh*				ⲱ	Hori	*h*				ⲏ
Fei	*f*				ⲫ	Janjia	*j*				ⲍ
Chei	*ch*				ⲭ	Tshima	*tsh*				ⲋ

with the alphabet of the Codex Alexandrinus, which may be taken as the type of the Greek uncial used in Egypt in the 5th century. It will be seen that the divergences are very trifling.[1] The affiliation of the characters borrowed from the Demotic is given below, as determined by Brugsch.

§ 6. THE SLAVONIC ALPHABETS.

The Russian alphabet, being the official script of an empire which includes a seventh part of the habitable globe, ranks in its territorial extension with the Latin and the Arabic. In the reign of Peter the Great the old Russian alphabet was reformed by Elias Kopievitch: of the original 48 letters, 14 were discarded as unnecessary, the forms of several characters were modified, and one new letter was introduced.

The primitive Russian alphabet is seen in a manuscript written in 1056 for Ostromir, Prince of Novgorod, and in an inscription at Kiev assigned to the year 996 A.D.[2] This differs little from the ecclesiastical Slavonic, commonly called the Cyrillic, which was invented in the reigns of the Greek Emperor Michael, and of Boris, Prince of Bulgaria (855—863 A.D.), by the apostles of the Northern Slaves, Cyril and Methodius,

[1] The Greek letters γ, δ, θ, χ, ψ, which were not required to express Coptic sounds, are used to transliterate Greek words, and are retained, together with *vau*, as numerals.

[2] See Madden's Silvestre, vol. ii., pp. 780, seq.

THE SLAVONIC ALPHABETS.

Names.	Values.	Glagolitic.	Cyrillic.	Wallachian Ruthenian.	Russian.	Names.	Values.	Glagolitic.	Cyrillic.	Wallachian Ruthenian.	Russian.
Az	*a*		а	А	А а	Uk	*u*		оу	ОУ	У у
Buki	*b*		б	Б	Б б	Fert	*f*		ф	Ф	Ф ф
Vedi	*v*		в	В	В в	Kher	*x*		х	Х	Х х
Glagol	*g*		г	Г	Г г	O	*ō*		ѡ	Ѡ	
Dobro	*d*		д	Д	Д д	Sha	*sh, ṡ*		ш	Ш	Ш ш
Est	*e*		е	Е	Е е	Shta	*sht, ṡt*		щ	Щ	Щ щ
Zhivête	*zh*		ж	Ж	Ж ж	Tsi	*ts*		ц	Ц	Ц ц
Zelo	*dz*		ѕ	Ѕ		Tsherv	*tsh, č*		ч	Ч	Ч ч
Zemlya	*z*		з	З	З з	Djerv	*dj*		ћ		
Izhe	*ê, i*		и	И	И и	Yet	*ye*		ѣ	Ѣ	Ѣ ѣ
I	*i, y*		і	І	І і	Yu	*yu*		ю	Ю	Ю ю
Kako	*k*		к	К	К к	Yer	*o/e*		ъ	Ъ	Ъ ъ
Lyudi	*l*		л	Л	Л л	Yery	*y*		ы	Ы	Ы ы
Muislite	*m*		м	М	М м	Yerek	*e/i*		ь	Ь	Ь ь
Nash	*n*		н	Н	Н н	Es	*eng*		ѧ	Ѧ	
On	*o*		о	О	О о	Yęs	*yeng*		ѩ		
Pokoy	*p*		п	П	П п	Ąs	*ong*		ѫ		
Reci	*r*		р	Р	Р р	Yąs	*yong*		ѭ		
Slovo	*s*		с	С	С с	Thita	*θ*		ѳ	Ѳ	Ѳ ѳ
Tverdo	*t*		т	Т	Т т	Yzica	*ü*		ѵ	Ѵ	Ѵ ѵ
		I.	II.	III.	IV.			I.	II.	III.	IV.

for the use of the heathen Moravians and Bulgarians, and employed for Cyril's translation of the Psalms and Gospels into the old Bulgarian language.[1]

Cyril's original alphabet consisted of 38 letters, afterwards increased to 48. Of these, 24 are identical with the ordinary Greek uncials of the 8th or 9th century.[2] But the resources of the Greek alphabet being insufficient to express the numerous vowels, sibilants, and nasals of the Slavonic languages, additional characters were required.[3] Some of these were ob-

[1] The tradition as to the origin of the Cyrillic alphabet is related by Khrabre, a Bulgarian monk, who tells us that he knew persons who had known Cyril and Methodius. Khrabre's account, which is preserved in the work of John, Exarch of Bulgaria, (890 to 922) is as follows: "Formerly," he says, "the Slavonians had no books, but they read and made divinations by means of pictures and figures cut [on wood] being pagans. After they had received baptism they were compelled, without any proper rules, to write their Slavonic tongue by means of Greek and Latin letters. But how could they write well in Greek letters [such words as] Bog, Zhivot, Zelo, or Tserkov .... and others like these. And so many years passed by. But then God, loving the human race, had pity upon the Slavonians, and sent them St. Constantine the Philosopher, called Cyril, a just and true man, who made for them an alphabet of thirty-eight letters, of which some were after the Greek style, and some after the Slavonic language."

[2] Compare col. iii. on p. 154 with col. ii. on p. 196; or the 8th century Greek uncials given by Sabas in his *Specimena Palaeographica*, plate 5, with the oldest Cyrillic forms in plate 7.

[3] The letters ѧ ѭ are called the preiotized vowels; ъ and ь originally expressed the neutral vowel. In Russian they are written but not pronounced, ъ hardening the preceding letter and

tained by differentiation, в *b* and в *v*, for instance, being modifications of the uncial *beta;* some again, such as ю *yu*, or я *ya*, are mere ligatures; but, in addition to those which can be thus explained, there are a number of strange symbols, such as ш *sh*, щ *sht*, ц *ts*, ч *tsh*, ж *zh*, ѣ *ye*, ѧ *eng*, whose origin has been the cause of much speculation. Mr. Peile, the latest writer on the subject, considers that some of these characters were arbitrary inventions of Cyril, who "had recourse to the inartistic expedient of using two or three upright strokes, with small modifiers below."[1] This explanation and reproach cannot be admitted, since these mysterious characters are indubitably related to the corresponding letters in an older Slavonic alphabet, variously called the Glagolitic, Azbukvitza, Bukvitza, or Hieronymian,[2] which

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ь softening it. The letter ж is the French *j* in *jamais*, ч the English *ch* in *Church*, щ is a very hard sibilant, *schtsch*. The sounds of и and і are indistinguishable, as are those of their prototypes η and ι in Modern Greek. The fact that *b* and *v* were expressed only by differentiated symbols, shows that in Cyril's time *beta* had already acquired the sound of *v*, which it has in Modern Greek. The letters *Ęs* and *Ąs*, pronounced *eng* and *ong*, are the nasalized vowels *e* and *o*. The primitive powers of the Slavonic letters are exhaustively discussed by Miklosich in his *Altsloveniche Lautlehre* (Vienna, 1878), to which the reader may be referred. Cf. Schleicher, *Formenlehre der Kirchensl. Sprache* (1852); Chodzko, *Grammaire Paléo-slave* (1869).

[1] *Encyclopædia Britannica*, 9th ed., vol. i., p. 614 (1875).

[2] Glagolitic (*glagolski*, 'literary') is an adjective derived from *glagoli*, 'words', 'letters.' The name Azbukvitza, or *Azbukividarium*, is formed, like the words alphabet and *abecedarium*, from the names of the letters which stand first. The designation 'Hieronymian' embodies

was probably in use among the Croatians as early as the 7th century,[2] even dating, according to the Slavonic tradition, from the 4th. The Glagolitic was the liturgical alphabet of the Slovenians, Illyrians, Croatians, and the other western Slaves who acknowledged the Roman obedience, just as the Cyrillic became

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the dubious tradition of the invention of this alphabet in the 4th century by St. Jerome, who was by birth a Dalmatian. See note on p. 205.

[2] The most ancient Glagolitic codices are probably not older than the 10th century, most of them being considerably later. There are two Glagolitic missals, assigned to the 14th century, in the Bodleian. The oldest known codex is a manuscript belonging to Count Cloz, of Trent, which contains a Slavonic version of some of the sermons of St. Chrysostom. It has been published by Kopitar, *Glagolita Clozianus* (1836) and is assigned to the 11th or possibly to the 10th century. As early as 1483 a Glagolitic missal was printed, probably at Venice. To one of the few Glagolitic MSS. which have reached the West, a curious bibliographical romance attaches. In the communal library at Rheims is treasured a venerable volume called the *Texte du Sacre*, on which the French kings took the coronation oath by touching the Gospels. The book consists of forty-seven leaves, bound in oak boards covered with red leather, formerly studded with gems and relics. It originally came from Constantinople, and was at one time in the possession ot the Emperor Charles IV., king of Bohemia, and seems to have been given to Nôtre Dame of Rheims by Cardinal de Lorraine in 1574. The nature of the writing was unknown, being variously conjectured to be Greek, Syriac, 'Oriental,' or Indian. In 1717 it was shown to the Czar Peter and his suite on their visit to Rheims, and was then recognised to be a Slavonic Evangelistarium, the first portion being in Cyrillic characters and the remainder in Glagolitic. See Silvestre, *Pal. Univ.*, plates 33^1, 33^2, and text.

the script of the northern races—Ruthenians, Russians, Bulgarians, and Servians—who adhered to the Orthodox communion.

The relation of the two Slavonic scripts is shown not only by the incorporation of Glagolitic characters in the Cyrillic, but by the identity of the letter names,[1] which are mostly significant Slavonic words,[2] evidently selected on the familiar acrologic principle—some, possibly, on account of a fancied pictorial appropriateness.

The fortunes of the two alphabets have been widely different. The Cyrillic has become one of the three great dominant alphabets of the world, while its precursor, the Glagolitic, at first only the liturgical script of the western Slaves, has been supplanted by the Latin alphabet, and is now little more than a literary curiosity. Such interest as it still possesses is due to its having been one of the sources from which the Russian alphabet was obtained, and to the singular mystery in which its origin is shrouded.

The most diverse theories have been put forward as to the source of this queer and anomalous script. It has been derived from the Hebrew, the Armenian, the

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[1] A few letters, mostly excluded from the Table, bear Greek names, such as *ksi*, *psi*, and *thita*. They do not seem to have existed in the original Glagolitic alphabet. This is an indication that the Cyrillic names were borrowed from the Glagolitic.

[2] As *buki*, 'a beech-tree;' *vedi*, 'meadow;' *zemlya*, 'land;' *lyudi*, 'people;' *zhivete*, 'life;' *slovo*, 'speech.'

Coptic, the Oscan, and the Latin. It has been argued, on the one hand, that it was a corruption of the Cyrillic, dating only from the 13th century, and on the other that it was obtained direct from Phœnician traders at some immensely remote period. Slavonic tradition assigns its invention to St. Jerome, while a more recent theory, which has been adopted by such eminent scholars as Jacob Grimm, Sreznievski, Chodzko, and Lenormant, makes it an adaptation or survival of the "Slavonic Runes,"[1] the existence of which is however entirely hypothetical, the only examples which have been produced being, as Professors Jagić and Nehring have conclusively proved, nothing but clumsy modern forgeries.[2]

Three years ago I ventured to suggest[3] a solution of the problem, which having met with general acceptance among Slavonic scholars, may here be reproduced.

The antecedent probabilities are in favour of a Greek origin for the Glagolitic script. The meagre historical evidence which we possess points to this solution. From the nearly contemporary account of the monk

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[1] A few of the Glagolitic letter names may possibly be related to the Rune names. Thus for corresponding letters we have

Runic names:	as	is	wen	ger	sail	rais
Glagolitic names:	az	izhe	on	kher	zelo	reci.

[2] Jagić, *Zur Slavischen Runenfrage.* (*Archiv für slavische Philologie*, vols. ii. and v.)

[3] Taylor, *Ueber den Ursprung des glagolitischen Alphabets.* (*Archiv f. sl. Phil.*, vol. v., 1880.)

Khrabre we learn that the Slaves wrote in an imperfect manner with Greek letters for 'many years' before Cyril introduced his improved alphabet. In the next place, to say nothing of the geographical and chronological limitations, it will be noticed that the differences between the Cyrillic and Glagolitic alphabets are chiefly confined to the forms of the letters, which, as we have frequently had occasion to note, are liable under certain conditions to extreme variability, while the two alphabets are in singular agreement in the more essential particulars, such as the number, order, names, and powers of the characters. Hence their sources are presumably not far apart. The Cyrillic being essentially the 9th century Greek uncial, the origin of the Glagolitic must be sought in some Greek script of somewhat earlier date.[1]

[1] The relative priority of the Glagolitic and Cyrillic scripts has been warmly disputed among Slavonic scholars, and has been usually decided in conformity with their ecclesiastical predilections. I assume the priority of the Glagolitic for the following reasons:—First, the improbability that such a clumsy script as the Glagolitic, which Schleicher well calls "monstrous," could have arisen at all if the Slaves had been already acquainted with the far superior Cyrillic alphabet. Next, Khrabre's account points to the existence of a Slavonic script older than the Cyrillic. Thirdly, certain characters, such as ш *sh* and ж *zh*, were clearly borrowed by one script from the other. It is incredible that if these were borrowed from the Cyrillic, other convenient signs should not also have been taken, whereas no difficulty attaches to the borrowing of these signs by Cyril, as they express sounds not represented in the Greek alphabet. In the fourth place we have the decisive fact, pointed out by Kopitar in his *Glagolita Clozianus*, that the oldest Glagolitic codices exhibit forms

ORIGIN OF THE GLAGOLITIC ALPHABET.

GLAGOLITIC.				GREEK	GLAGOLITIC.				GREEK
Names.	Values.	Late.	Early.	CURSIVE.	Names.	Values.	Late.	Early.	CURSIVE.
Az	*a*				Uk	*u*			
Buki	*b*				Fert	*f*			
Vedi	*v*				Kher	*χ*			
Glagol	*g*				O	*ō*			
Dobro	*d*				Sha	*sh*			
Est	*e*				Shta	*sht*			
Zhivête	*zh*				Tsi	*ts*			
Zelo	*dz*				Tsherv	*tsh*			
Zemlya	*z*				Djerv	*dj*			
Izhe	*ê*				Yet	*ye*			
I	*y*				Yu	*yu*			
Kako	*k*				Yer	*o/e*			
Lyudi	*l*				Yery	*y*			
Muislite	*m*				Yerek	*e/i*			
Nash	*n*				Ẹs	*eng*			
On	*o*				Yẹs	*yeng*			
Pokoy	*p*				Ạs	*ong*			
Reci	*r*				Yạs	*yong*			
Slovo	*s*				Thita	*θ*			
Tverdo	*t*				Izica	*ü*			
		I.	II.	III.			I.	II	III.

Here the history of Western Palæography supplies a suggestive analogy. In the 7th century the Irish uncial, which was the old Roman cursive uncialized, came into competition with the Roman uncial which was derived from the capitals, and borrowed some of its forms. The same may have occurred in the East, in which case the Glagolitic might prove to be merely an uncialized form of the Greek cursive.

How far this hypothesis may suffice to explain the facts will be seen by an examination of the preceding table. The first column contains the ordinary square Glagolitic characters, which certainly bear as little resemblance to the Greek cursives as can well be imagined. These are followed by the rounded[1] and less regular forms found in the oldest manuscripts, which probably date from the 10th century.[2] Side by side with them are placed Greek cursive forms which were

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of the ancient Slavonic speech which are earlier than those used in any manuscripts written in the Cyrillic character.

[1] The older rounded forms go by the name of 'Glagolitique à lunettes,' several of the letters, such as *glagol*, *dobro*, and *lyudi*, resembling spectacles.

[2] Facsimiles of ancient Glagolitic MSS. are given by Dowbrowsky, *Glagolitica* (Prag, 1845); Hofler und Schafarik, *Glagolitische Fragmenta* (Prag, 1857); Rački, *Pismo Slovensko* (Agram, 1861); Jagić, *Quatuor Evangelium Codex Glagoliticus, olim Zographus* (Berlin, 1879). I am indebted to Prof. Jagić of St. Petersburg, to Mr. Morfill of Oxford, and to Canonico Parčić of S. Girolamo degli Slavi at Rome, for aid and information, and to Prof. Sayce for valuable suggestions as to the probable affiliations of some of the Glagolitic characters.

in use prior to the invention of the Cyrillic alphabet.[1] It will be seen that these Greek cursives, if squared and uncialized, so as to adapt them to liturgical use, yield possible prototypes for the Glagolitic forms, many of which, as the analogy of the Cyrillic alphabet would suggest, prove to be mere ligatures.

With the aid of the Glagolitic, it becomes easy to explain the origin of those of the Cyrillic and Russian letters which were not derived from the Greek uncial. As the following table shows, they are manifestly ligatures, either borrowed, like *zhivete* and *sha*, from the Glagolitic, or obtained from the ligatures usual in the 9th century Greek minuscule.[2]

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[1] The 6th century is probably the earliest time at which the Slaves were brought into such contact with Hellenic culture, as to make possible the transmission to them of a Greek alphabet. The advance of the Avars in the 6th century drove the Lombards into Italy, and split the Slaves into two bodies, driving them to the north-west on the one hand, and to the south-west on the other, the Magyar invasion placing a final barrier between the northern and southern Slaves. In the 7th century the Croats addressed a letter to the Pope in their own script, which presumably was the Glagolitic. Its origin comes therefore within narrow limits of date. It is not easy to find good examples of Greek cursive belonging to the required period and place. The cursive papyri of the 2nd and 3rd centuries A.D. (Gardthausen, *Gr. Pal.* pl. 3) are too early, and do not yield the required forms, and hence we have to fall back to a great extent on the subscriptions of the bishops to the Acts of the Council of Constantinople 680 A.D., and the letter of Constantine to Pippin, which are somewhat too recent.

[2] It will be observed that the corresponding letters in the two alphabets are not always obtained from the same ligatures.

THE LIGATURES.

Names.	Values.	Cyrillic.	Russian &c.	Ligatures.
Zhivête	*zh*	Ж	Ж	τσ (δσ ?)
Sha	*sh*	Ш	Ш	σσ
Shta	*sht*	Щ	Щ	σστ
Tsi	*ts*	Ц	Ц	τσ
Djerv	*dj*	Ѣ	Ъ	τι
Tsherv	*tsh*	Ч	Ч	τσ
Yet	*ye*	Ѣ	Ѣ Я	αε αι
Yu	*yu*	Ю	Ю	ιο
Yer	$\frac{o}{e}$	Ъ	Ъ	οε
Yery	*y*	Ы	Ы	οει
Yerek	$\frac{e}{i}$	Ь	Ь	ε
Ęs	*eng*	Ѧ	Î	ιν
Ąs	*ong*	Ѫ	Ѫ	ον
Yęs	*yeng*	Ѩ		ιιν
Yąs	*yong*	Ѭ		ιον
Uniku, Uk	*ü*	Ѹ	ѹ y	ου

Of the other Slavonic alphabets little need be said. The Ruthenian is the unreformed Russian alphabet, and hence is nearly identical with the Cyrillic. The Servians have four additional letters, originally ligatures, invented to express the sounds *dy*, *ly*, *ny*, *ty*. Owing to geographical proximity the Cyrillic alphabet was originally adopted by the Wallachians; the omission of the iotized vowels and other needless characters, and the addition of џ *dzh*, and î *un*, giving them an alphabet of twenty-seven symbols; but a Slavonic alphabet being unsuited to their Latin speech, it is now generally replaced by the Roman characters. The Glagolitic alphabet has been supplanted among the Bulgarians by the Russian, and among the Illyrians, Croats, and Slovenians by the Roman.

The Bohemians and the Poles, whose Christianity was of Latin origin, adopted from the first the Roman letters, which, by means of diacritical marks, have been nearly doubled in number, in order to express the numerous sounds of Slavonic speech.

§ 7. THE ALBANIAN ALPHABETS.

The Albanians, who call themselves Skipetar, or "Highlanders," are divided into two tribes—the Geghs, who occupy the northern region, which partly corresponds to the ancient Illyria, and the Tosks, whose territory is nearly conterminous with Epirus. About half of the Albanians are nominally Christians. In

the north they acknowledge the Roman obedience, and have adopted the Latin alphabet; in the south they adhere to the orthodox communion, and use a modified form of the Greek minuscule, adapted to the requirements of Albanian speech by diacritical points and the introduction of two or three of the Roman letters.

The German traveller von Hahn, to whose researches Albanian philology owes so much, succeeded, about thirty years ago, in recovering two earlier Albanian alphabets, one of which he found in use among the Tosks of Elbasan and Berat, while the other was obtained from an Albanian named Büthakukye. These alphabets are evidently debased derivatives from the Greek cursives or minuscules, and are chiefly interesting as exhibiting the alphabetic deformation which occurs among isolated races who are destitute of a literature. We shall presently have occasion to notice parallel degradations of Indian alphabets found among some of the Malay races.

Early forms of the Albanian alphabets being unknown, the affiliation of the letters, several of which however are plainly mere ligatures,[1] cannot be determined with certainty.[2] The following Table must therefore be regarded as only tentative.

[1] See von Hahn, *Albanesische Studien*, p. 281.

[2] The Büthakukye alphabet seems to have been derived, at no very remote period, from the Neo-Hellenic. In the Elbasan, which is plainly much older, some of the forms are analogous to those of the Illyrian Glagolitic. Compare, for instance, *v*, *e*, *l*, *s*, *r*, *n* with the Glagolitic types of the same letters.

THE ALBANIAN ALPHABETS.

Values.	Büthakukye.	Elbasan.	Probable Greek Prototypes.	Values.	Büthakukye	Elbasan.	Probable Greek Prototypes.	Values.	Büthakukye.	Elbasan.	Probable Greek Prototypes.
a	𐓀 𐓁	𐔀	*α*	*n*	𐓍 𐓎	𐔋	*ν*	*v*	𐓩 𐓪	𐔖	*β*
b	𐓂 𐓃 𐓄	𐔁	*β*	*x*		𐔌	*ξ*	*d*	𐓅 𐓆	𐔗	*δ*
g	𐓇 𐓈	𐔂	*γ*	*o*	𐓏 𐓐	𐔍	*o*	*y*		𐔘	*ϵ*
dh	𐓉 𐓊	𐔃 𐔄	*δ*	*p*	𐓑 𐓒	𐔎	*π*	*y*	𐓫 𐓬		*η*
e	𐓋 𐓌	𐔅	*ϵ*	*r*	𐓓 𐓔	𐔏	*ρ*	*ss*	𐓭 𐓮		*σ*
z	𐓍 𐓎	𐔆	*ζ*	*s*	𐓕 𐓖	𐔐	*σ*	*u*	𐓯 𐓰		*υ*
ē	𐓗 𐓘		*η*	*t*	𐓙 𐓚	𐔑	*τ*	*gh*		𐔒	*κ*
th	𐓛 𐓜	𐔇	*θ*	*ü*	𐓝 𐓞	𐔓	*υ*	*e*		𐔙	*ι*
i	𐓟 𐓠	𐔉	*ι*	*f*	𐓡 𐓢	𐔔	*φ*	*e*		𐔚	*ι*
k	𐓀 𐓁	𐔊	*κ*	*kh*	𐓣 𐓤	𐔕	*χ*	*u*		𐔛	*o*
l	𐓥 𐓦 𐓧 𐓨	𐔈	*λ*	*ō*		𐔜	*ω*	*rr*		𐔝	*ρ*
m	𐓱 𐓲	𐔋	*μ*								
I.	II.	III.	IV.	I.	II.	III.	IV.	I.	II.	III.	IV.

THE LIGATURES.

Elbasan.						Büthakukye.	
as	𐔀 = *α*+*σ*	*dsh*	𐔞 = *θ*+*σσ*	*ky*	𐓀 𐓟 = *κ*+*ι*		
ps	𐔞 = *π*+*σ*	*ndsh*	𐔟 = *ν*+*θσσ*	*ks*	𐓀 𐓑 𐓭 = *κ*+*σ*		
mb	𐔠 = *μ*+*β*	*nd*	𐔡 = *ν*+*δ*				
st	𐔢 = *σ*+*τ*	*ds*	𐔣 = *δ*+*σ*	*dz*	𐓅 𐓭 = *δ*+*σ*		
sh	𐔤 = *σ*+*σ*	*nds*	𐔥 = *ν*+*δσ*				
shy	𐔦 = *σσ*+*ϵ*	*ngh*	𐔧 = *ν*+*κ*	*ds*	𐓕 𐓭 = *θ*+*σ*		
sht	𐔨 = *σσ*+*τ*	*gy*	𐔩 = *κ*+*ϵ*	*tzy*	𐓅 𐓭 = *τ*+*σ*+*ι*		
te	𐔪 = *τ*+*ϵ*	*ngy*	𐔫 = *ν*+*κϵ*				
ts	𐔬 = *τ*+*σ*	*ly*	𐔭 = *λ*+*ϵ*	*ng*	𐓍 𐓎 = *η*+*ν*		
		ky	𐔮 = *κ*+*ι*				

§ 8. THE RUNES.

In the Scandinavian lands, Sweden, Denmark, and Norway, there are thousands of inscriptions in the ancient alphabet of the heathen Northmen, which is called Runic. Similar records are scattered over the regions which were overrun or settled by the Baltic tribes. They are found in the valley of the Danube, which was the earliest halting-place of the Goths on their southward migration; in Kent, which was conquered by the Jutes; in Cumberland, Orkney, and the Isle of Man, which were occupied by the Norwegians. The oldest of these records may date from the 1st or 2nd century A.D., a few are as late as the 14th or 15th century, the greater number being older than the 10th or 11th, when, after the conversion of Scandinavia, the Runes were gradually replaced by the Latin alphabet. The letters are called Runes, and the alphabet bears the name of the Futhorc, from the first six letters ᚠ ᚢ ᚦ ᚨ ᚱ ᚲ, *f, u, th, o, r, c.*

Runes of different periods and countries naturally exhibit considerable differences. They may however be classified in three main divisions, the Gothic, the Anglian, and the Scandinavian, which are tabulated on p. 218. The first column, which contains the Gothic Futhorc of twenty-four runes, exhibits the earliest type, as found in inscriptions prior to the 6th century; in the second column are the Anglian runes used in

Northumbria from the 7th to the 9th centuries; while the third gives the later Scandinavian Futhorc of sixteen runes, used in Denmark, Sweden, Norway, Cumberland, and the Isle of Man, from the 10th century onward. The fourth column contains the Mœso-Gothic alphabet constructed in the 4th century by Ulphilas, Bishop of the Goths. It is based on the contemporary Byzantine uncials, to which the runic names have been assigned, and incorporates a few runic characters.

The Gothic Futhorc being manifestly the primitive type from which the Anglian and Scandinavian runes were developed, the determination of the origin of the runes depends on the inscriptions, about 200 in number, which are written in this alphabet.

The dates and geographical distribution of these inscriptions will be found to reduce within narrow limits the possible sources from which the runic writing could have been obtained. First in historical importance must be ranked a massive gold torque, of the intrinsic value of about £4000, found at Buzeo in Wallachia, apparently on the site of a heathen temple, and bearing, in well-formed runic characters, an inscription which informs us that it was "dedicated to the temple of the Goths." The torque must have constituted the spoils of some recent triumph, and the date cannot be later than the beginning of the 3rd century, when the Goths were still heathens, and fresh from the plunder of Mœsia and Thrace. In the same early alphabet, and also of 3rd century date, as appears from the evidence

of associated Roman coins, are runic inscriptions, engraved on ornaments, implements, and weapons found in an ancient cemetery at Nordenhoff near Augsburg, and in two Danish peat bogs, anciently lakes, from one of which was exhumed the hoard of some trader or chieftain, consisting of some 3000 miscellaneous articles, and from the other three war-ships, sunk in storm or battle, with all their contents, the skeletons of the horses still retaining the iron bits between their jaws. To a later alphabetic type belongs the silver broach of a Burgundian chief, with an inscription of ownership and an abecedarium or futhorc containing the first nineteen runes in their accustomed order, which was found along with a great quantity of ornaments and weapons on the battle-field of Charnay on the Saône, where the Burgundians were defeated with great slaughter by the Franks under Clovis.

To these inscriptions definite dates, ranging from the 3rd century to the 5th, may be confidently assigned on historic grounds. But from Jutland and Norway there are other inscriptions, such as the Fröhaug bronze, the Dalby diadem, the Tune stone, and the Thorsbjerg Moss weapons, which exhibit forms of the runes decisively more archaic, and which therefore must be assigned to an earlier period, the 1st or 2nd century of our era at the least.[1]

[1] Facsimiles of all the inscriptions will be found in Stephens' *Runic Monuments:* viz., Buzeo torque, p. 567; Nordenhoff broach, p. 574; Danish Moss weapons, pp. 285 to 309; Charnay broach, p. 587; Fröhaug bronze, p. 250; Dalby diadem, p. 283; Tune stone, p. 247.

These and similar records prove that the Scandinavian races must have been in possession of a definite and well established alphabet before their dispersion began. Now the advance of the Goths down the Dneiper to the plains of the Danube dates from the 2nd century A.D., while their northward migration across the Baltic to the shores of Sweden must be assigned to a still earlier time. The Futhorc, though plainly related to the Mediterranean alphabets, differs so greatly from every known type, that its evolution must have occupied many generations; and hence it is difficult to avoid the conclusion that the first transmission of alphabetic writing to the Baltic tribes must have taken place some centuries before the commencement of the Christian era.

The question as to the precise source from which the Futhorc was obtained has been a fruitful source of conjecture and controversy. The pre-scientific hypothesis, that the runes were arbitrarily invented by some Scandinavian people, may be summarily dismissed as contrary to all the analogies afforded by alphabetic history. The theory propounded by Dieterich, Lenormant, and Peile, that the runes originated out of a Semitic alphabet transmitted by Phœnician merchants, has been supported by no valid arguments, and cannot be considered as more than a mere guess, and hence the only possible source of sufficiently early date must be either Hellenic or Italic.

A Latin origin, which has been advocated by Kirchhoff,[1] and more recently by Wimmer,[2] is open to very serious objections, geographical, chronological, and phonological. The runes seem to have been unknown to any of the Teutonic tribes who came into early contact with the Romans. Dr. Wimmer is obliged to assume that they were obtained from Gaul about the beginning of the Christian era, but he is unable to explain how they were transmitted from Gaul to the Baltic, through a host of hostile tribes, without leaving behind any traces of their passage. The chronological difficulty is not less formidable than the geographical. Runic inscriptions from Denmark and Norway actually date, as we have seen, from the time of the early empire, and hence it is impossible to obtain a sufficient period of time for the evolution of the differences which distinguish the Futhorc from the Latin alphabet. But the phonological difficulty seems by itself to be absolutely conclusive. Although the Latin alphabet supplies easy prototypes for several of the runes, such, for example, as ᚦ *d*, ᚱ *r*, ᛁ *i*, ᛒ *b*, ᛊ *s*, it offers no explanation of the origin of others which occur in the very oldest inscriptions, such as ᚷ *g*, ᛝ *ng*, ᛖ *ē*, ᛞ *d*, ᛟ *ō*, which, as we shall presently see, can be explained without difficulty as derivatives from letters peculiar to Greece, χ, γγ, η, θ, ω. It appears therefore that

[1] Kirchhoff, *Das gothische Runenalphabet*, Berlin, 1854.

[2] Wimmer, *Runenskriftens Oprindelse og Udvikling i Norden*, Kopenhavn, 1874.

a Greek source remains as the only possible hypothesis.[1]

The geographical and chronological limitations of the problem must first be stated. The Buzeo torque from Wallachia proves that the runes were brought with them by the heathen Goths, when in the 2nd century they advanced from the Baltic to the Danube, while the early records from Norway and Jutland prove that the same runes were employed by Gothic tribes who had previously migrated northwards. Now in the time of Pythias (4th century B.C.), of Tacitus (1st century A.D.), and of Ptolemy (2nd century A.D.), the Goths occupied a region south of the Baltic and east of the Vistula. Being a numerous people, their realm must have extended over the Russian goverments of Grodno, Volhynia, and Minsk, southward probably, from the neighbourhood of Dantzig to the upper waters of the Pripet and the Dnieper. Here they would be in possession of the northern half of the great trade route between the Baltic and the Euxine, and would

[1] Five years ago I ventured to put forward this solution in a little book entitled *Greeks and Goths, a Study on the Runes* (Macmillan, 1878). I there stated with considerable detail the difficulties attaching to the Latin hypothesis, and the reasons in favour of a Greek origin. The arguments then advanced not having been refuted, and the new theory having met with very general acceptance among scholars, including several who had previously advocated some other solution, it may here suffice briefly to restate the general results of that inquiry, without repeating the more technical details of the proof.

be in commercial intercourse with the Greek traders from Olbia, who, as we learn from Herodotus, ascended the Dnieper for forty days' journey as far as Gerrhos, a trading post which cannot have been very far from the southern frontier of the Gothic realm; and where the amber and furs of the north were doubtless bartered for woven stuffs, pottery, weapons, ornaments, and the precious metals. Material evidences of the extent of this commerce are not wanting. Hoards of early Greek coins have been found even beyond the limits of the Gothic territory, and there are not a few evidences of the Greek origin of the civilization of this region.[1]

From the Greek traders of Olbia with whom, not improbably at Kiev, the Goths were in commercial contact, they may readily have obtained a knowledge of the Greek alphabet, just as the Greeks themselves obtained it from the Phœnician merchants. The probable date would be the 6th century B.C., which would

[1] Greek coins struck in the 3rd century B.C. have been found near Riga; a hoard of coins minted in the 5th century B.C. at Olbia, Ægina, Athens and Cyzicus, was recently dug up on the lower Vistula, near Bromberg, in Posen; while to a still earlier date we must assign twenty-four gold gryphons of Assyrian workmanship which were discovered near Kiev on the Dnieper. Moreover the structure of the house in the valley of the Vistula differs in most essential particulars from the plan adopted in other parts of Germany, and can only be explained as a survival of the Greek type. See Henning, *Das deutsche Haus in seiner historischen Entwickelung;* Wiberg, *Einfluss der Klassischen Völker auf den Norden;* Von Sadowski, *Handelstrassen der Griechen und Römer;* Kuhn and Mehlis, *Vorgeschichte des Menschen in östlichen Europa.*

allow sufficient time for the development of the considerable differences which distinguish the oldest runes from the Greek letters.

This early date is obtained from a variety of concordant indications. Many of the older runic inscriptions are either retrograde or boustrophedon in direction, a proof, not without cogency, that the alphabet was obtained from the Greeks before the 5th century, when their writing had finally assumed the more convenient direction from left to right.

Again, the standard Greek alphabet of the 5th and following centuries does not supply prototypes for the runes so satisfactory as the earlier alphabet which prevailed in Thrace and in the Greek colonies on the Euxine during the 6th century, just before the commencement of the Persian war. In the type of the Greek alphabet from which the runes were derived, the new letters Χ and Ω must have already been introduced, *eta* must have been open, and have denoted both *ē* and *h*, ϟ must have been used instead of Μ or ξ, and the alphabet must have retained certain forms which afterwards disappeared, such as *koppa* and the tailed *rho* ϼ, the old *lambda*, ᛚ instead of Λ, and the old *theta*, ⊗ instead of Θ.

All these peculiarities were transmitted to the runes. I have elsewhere shown[1] that they specially characterize the 6th century alphabet of Thrace and the

[1] *Greeks and Goths*, pp. 40, 51, seq.

THE RUNIC ALPHABETS.

Names.	Values.	RUNES. I. Gothic.	II. Anglian.	III. Scandinavian.	IV. Alphabet of Ulphilas.	
fech, feh, fe	*f*	ᚠ ᚡ	ᚠ ᚡ	ᚠ	𐌵	*ϕ*
ur, hur	*u*	ᚢ ᚤ	ᚢ ᚤ	ᚢ	𐌿	*ου*
thorn	*th*	ᚦ ᚧ ᚦ	ᚦ	ᚦ	𐍀	*δ*
asc, æsc, os	*a, æ, o*	ᚨ ᚫ	ᚪ ᚫ	ᚬ	𐌰	*α*
rad, rat	*r*	ᚱ ᚲ	ᚱ	ᚱ ᛦ	𐍂	*ρ*
cen, kaun	*c, k*	ᚳ ᚴ	ᚳ	ᚴ	𐌺	*κ*
gebo, gifu	*g*	ᚷ	ᚷ		𐌳	*γ*
wen	*v, w*	ᚹ	ᚹ		𐍅 ᚹ ⊙	v,hv
hegl, hagal	*h*	ᚺᚽᚻᚼ	ᚻ	ᚼ	𐌷	h
nyd, nod	*n*	ᚾ ᚿ	ᚾ	ᚾ ᚿ	𐌽	*ν*
is	*i*	ᛁ	ᛁ	ᛁ	𐌹	*ι*
ger, yr, ar	*y, ge, j, a*	ᛄ ᛋ ᛅ	ᛄ	ᛦ ᛅ	𐌾	j
hic, ih, eoh	*ih, i, eo*	ᛇ ᛡ	ᛡ		𐍆	*ζ*
peorth, perc	*p*	ᛈ	ᛕ ᛢ	ᛕ	𐌠	*π*
ilix, calc	*a, i, k, x*	ᛉ	ᛉ		𐌲 𐌱	q
sigil	*s*	ᛊ	ᛋ	ᛋ	𐌢	*σ*
tir	*t*	ᛏ	ᛏ	ᛏ ᛏ	𐌸	*τ*
berc, berith	*b*	ᛒ	ᛒ	ᛒ	𐌲	*β*
hæc, ech, eh	*e*	ᛖ ᛗ	ᛗ		𐌴	*η*
man	*m*	ᛗ	ᛗ	ᛘ ᛦ	𐌼	*μ*
lagu	*l*	ᛚ	ᛚ	ᛚ	𐌻	*λ*
ing	*ng*	ᛜ ᛝ	ᛝ		𐌧	*χ*
dag, dæg	*d*	ᛞ ᛞ	ᛞ		𐌿	*θ*
othil	*o, œ*	ᛟ ᛟ	ᛟ		𐍉	*ω*

Euxine colonies, to which the geographical conditions point as the probable source from which the runes must have been obtained.

Having already urged at considerable length[1] the arguments as to the affiliation of the individual runes, I need not here repeat them. They are necessarily minute and technical, depending to a great extent on the phonological changes in Gothic speech which are formulated in Grimm's law. The results obtained may however be briefly recapitulated.

As in the case of other alphabets, we may expect to find changes of five kinds: (1) disuse of needless letters; (2) evolution of new letters; (3) changes of form; (4) changes of value; (5) changes of position.

Thus the rune *asc* ᚨ, derived from *epsilon*, denoting *a*, *alpha* disappeared, while *beta* was differentiated into three runes, *berc* ᛒ, *perc* ᛈ, and *fech* ᚠ, representing *b*, *p*, and *f*. By Grimm's law a Gothic *k* represents a primitive *g*, and hence we may identify the *k* rune, ᚲ or ᛦ, with the Thracian *gamma*, ᚳ or ᚴ. Since *g* may weaken into *y* and *u*, we also obtain from *gamma* the second rune, ᚢ *u*. The rune ᛝ *ng* is merely a ligature representing γγ, as is proved by the variant forms ᛜ ᛜ ᛝ ᛝ ᛝ ᛝ which are found in early inscriptions. In Greek, as well as in the Mœso-Gothic version of the Bible by Ulphilas, the sound of *ng* is represented by *gg*, a peculiarity of the runes inconsistent with a Latin origin.

[1] *Greeks and Goths*, pp. 56 to 87.

The three runic dentals ᚦ *th*, ᛝ or ᛞ *d*, and ᛏ *t*, correspond to the three Greek dentals Δ *d*, Θ *th*, and Τ *t*, the phonetic changes being partly explained by the fact that by Grimm's law a Greek *θ* answers to a Gothic *d*.[1]

The Greek *eta* Η (*ē* and *h*) was differentiated into the two runes ᚷ or ᛗ *ē*, and ᚺ or ᚻ *h*. As in Latin, *kappa* was replaced by a *k* rune derived from *gamma*, while *iota* and *lambda* reappear without change of form or value as the *i* rune ᛁ and the *l* rune ᛚ. The *m* rune, ᛗ, was obtained from *mu* Μ, but was differentiated so as to avoid confusion with the *ē* rune ᛗ, derived from *eta*. In like manner *nu* ᚾ was the source of the *n* rune ᚾ, the change of form being explained by the *h* rune having beccme ᚾ.[2]

The letters *omicron* and *pi* disappeared, *o* and *þ* being represented by derivatives from *omega* and *beta*. The next three letters, *rho* Ρ, *sigma* Σ, and *tau* Τ, may be identified with the runes ᚱ *r*, ᛊ *s*, and ᛏ *t*. By Grimm's law a Greek *chi* answers to a Gothic *g*, which explains the origin of the *g* rune ᚷ. *Omega* Ω became the source of the *ō* rune ᛟ, while the *y* rune which assumes

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[1] That the correspondence should be incomplete indicates that the Lautverschiebung had commenced at the time of the transmission of the runes, but had not been completed. See *Greeks and Goths*, pp. 71 to 73.

[2] An analogous change, also due to correlation, has affected these two letters in Russian, where *eta* Η has become и *i*, and *nu* Ν has become н *n*.

the variant forms ᛦ ᛋ ᚾ ᛊ ᛌ was probably derived from *upsilon*, ᛘ or ᛉ. The rune ᛉ, which appears to have been originally a guttural, afterwards weakening into a vowel, may be referred to the Thracian *chi* ᛉ, while the *w* rune ᚹ seems to be from *koppa* ᛩ (*qv*), a derivation supported by the way in which *q* and *w* (*v*) are represented in the alphabet of Ulphilas.

Some of these changes of form, otherwise inexplicable, since they are from simpler and easier forms to others more complicated and seemingly more difficult, can be readily accounted for by the fact that the runes were essentially a xylographic script. This we learn[1] from the often quoted lines of Venantius Fortunatus, a 7th century writer, who says:

Barbara fraxineis pingatur rhuna tabellis;
Quodque papyrus agit, virgula plana valet.

The runic writing was cut in the wood in the direction of the grain, as may be seen in the case of some of the runic "clog almanacks" which are still in existence. Horizontal lines would therefore be inadmissable, and would give place, as a matter of graphic convenience, to lines running obliquely across the grain. We may thus account for the derivation of the runes ᛗ *ē*, ᚾ *h* and ᚢ *ih* from the Greek *eta* H, as well as for the Greek T having become ᛏ. The substitution of triangular for rounded forms, as in the case of the runes *wen*, *dag* and *othil*, probably derived from *koppa* ᛩ, *theta* ᛟ, and *omega* Ω, can thus easily be explained.

[1] Cf. Tacitus, *Germania*, c. 10.

The order of the Runes in the Futhorc differs materially from the order of the letters in the Greek alphabet, though the points of agreement are sufficient to show that the one has been based on the other. Thus the last rune ᛟ retained the station occupied by its prototype Ω, while the first four runes, ᚠ ᚢ ᚦ ᚨ, are descended from Β Γ Δ Ε, which follow each other at the beginning of the Greek alphabet. We have a similar sequence of four runes, *p*, *q*, *s*, *t*, in the middle of the alphabet. In other cases the order has been much disturbed. I have elsewhere shown[1] that these changes can be explained by the causes which have produced the dislocations of the primitive order in other alphabets, such as the Arabic, Ethiopic and Mongolian. These causes are of two kinds. Certain letters have been moved from their primitive places and placed side by side, either on account of the resemblance of their forms, or because of the similarity of their values. Thus the *ē* rune ᛗ has been brought into collocation with the *m* rune ᛘ, whose primitive form must have been ᛗ, while the *r* rune ᚱ must have been transferred to the place next to that formerly occupied by ᚴ, which afterwards disappeared. So the *d* rune ᛞ and the *ng* rune ᛝ were put next to ᛟ, to which they bear some resemblance. On account of the similarity of sound the *g* rune ᚷ was brought next to *c*, and the *y* and *ih* runes next to *i*.

[1] *Greeks and Goths*, pp. 99 to 105.

The Anglian and Scandinavian Futhorcs differ considerably from the primitive Gothic Futhorc. In the Anglian Futhorc the symbols have been multiplied; thus, from the primitive *a* rune ᚨ, the additional runes ᚩ *o*, and ᚫ *æ* were evolved by differentiation, while the rune ᚪ *oe* was probably obtained from ᚢ or ᚤ *u*.

On the other hand the changes in the Scandinavian Futhorc were mainly in the direction of simplification, the twenty-four runes of the Gothic Futhorc being reduced to sixteen by the disuse of eight superfluous runes, ᚷ *g*, ᚹ *w*, ᛇ *ih*, ᛦ *i*, ᛖ *e*, ᛝ *ng*, ᛞ *d*, ᛟ *o*; while several of the older forms were replaced by more convenient lapidary types, such as ᚪ instead of ᚱ, ᛇ for ᛡ, ᚴ for ᚲ, ᛋ for ᛊ, ᛏ for ᛏ, ᛉ for ᛗ, and ᚳ for ᛏ.

The Mœso-Gothic resembles the Cyrillic and the Armenian in being, to some extent, an artificial missionary alphabet, compounded of elements derived from distinct scripts. It was constructed by Ulphilas, or Wulfila (318—388 A.D.), Bishop of the Goths who had settled in the province of Mœsia, for his memorable translation of the Gospels, which forms the oldest extant monument of Teutonic speech. The alphabet is chiefly known[1] from the "Codex Argenteus" now in the University Library at Upsala. This beautiful manuscript, which is in silver and gold letters on purple vellum, is believed to have been written in Italy in the

[1] There are also a few fragmentary documents in the same alphabet which come from Italy, where the Gothic speech is believed to have survived till the 9th century.

6th century, and was carried off by the Swedes from Prag on the capture of that city in 1648.[1]

The Mœso-Gothic alphabet is given in col. iv. of the Runic Table on p. 218. Its composite structure is manifest. It is based on the Byzantine uncials of the 4th century,[2] with which Ulphilas must have been most familiar, with additional letters for those Gothic sounds for which there was no exact Greek equivalent. These were derived in some cases from the Futhorc, and in others from the Latin alphabet. For *u*, Ulphilas took the rune ᚢ (*ur*), and for *v* the rune ᚹ (*wen*), and for *o* the rune ᛟ (*othil*). For *h* he took the Latin symbol, and for *f*, *r*, *j*, *q*, *s*, either the runes or the Latin letters, probably the former. The names of the letters, as in the case of the Cyrillic and the Irish Bethluisnion alphabets, were the appellations already familiar to the people by whom the alphabet was to be used.

Thus *u*, *th*, *r*, *v*, *h*, *j*, *s*, *b*, *m*, *l*, *d*, *o*, were called urus, thaurnus, raida, vinja, hagls, jer, sojil, bairika, manna, lagus, dags, and othol, which are manifestly identical with the corresponding rune names ur, thorn, rad, wen, hagal, ger, sigil, berc, man, lagu, dag, and othil.

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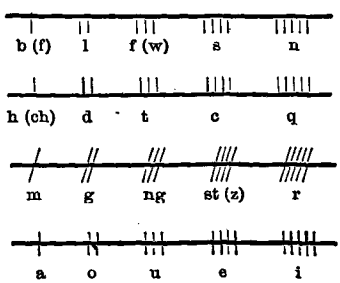
[1] For facsimile of the Codex Argenteus, see *Pal. Soc.* pl. 118. The Mœso-Gothic alphabet has been discussed by Waitz, *Ueber das Leben und die Lehre des Ulfila*, 1840; Zacher, *Das Gothische Alphabet Vulfilas*, 1855; Kirchhoff, *Das Gothische Runenalphabet* (1854), and by the numerous editors of the Mœso-Gothic version.

[2] See col. i. of the Table on page 154 *supra*.

§ 9. THE OGHAMS.

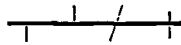
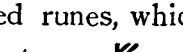
No runic inscriptions have been found in those parts of Wales and Ireland which were settled by the Scandinavians. In these regions the runes are replaced by the mysterious Ogham characters in which the most ancient records of Wales and Ireland are written. The Ogham writing, as I have elsewhere shown,[1] was simply an adaptation of the runes to xylographic convenience, notches cut with a knife on the edge of a squared staff being substituted for the ordinary runes. That the Oghams were derived from the runes is indicated by the fact that they are found exclusively in regions where Scandinavian settlements were established, and also by the fact that the names of the Oghams agree curiously with the names of the runes of corresponding value.

The Ogham characters, with their primitive values as restored by the researches of Prof. Rhys, are as follows, the ancient values being enclosed in brackets:



[1] *Greeks and Goths*, pp. 108—139.

An explanation of the mode in which this alphabet was obtained from the runes is suggested by the somewhat similar Scandinavian 'tree runes,' which were a sort of cryptograms, constructed on the plan of indicating, by the number of branches on the tree, the place occupied in the Futhorc by the corresponding ordinary rune.[1] The Oghams seem to have been merely tree runes constructed on a somewhat different principle. The Irish regarded the Oghams as a forest, the individual characters being 'trees,' *feada*, while each cross stroke is called a 'twig,' *fleasg*.

The exact principle of construction is only a matter of conjecture, but it seems probable[2] that the four Oghams with one twig  , which originally formed the first class, or grove, were taken as representatives of the branched runes, which bear a general resemblance to the first rune ᚠ. The Oghams with two twigs  would similarly correspond to the four crooked runes, of which the second rune was the type; the Oghams with three twigs representing the looped runes, or hollow trees, formed on the type

[1] The runes were divided into 'families,' branches to the left of the stem indicating the family, and branches to the right the place of the rune in the family. Thus a tree with two branches to the left and six to the right would denote *þ*, the sixth rune in the second family. The Arabic cryptograms called *El Mushajjar* and *El Shajari*, the 'branched' or 'tree-shaped,' were similarly constructed out of the Arabic alphabet, after the Arabs had come into contact with the Varangians in the 9th century.

[2] See *Greeks and Goths*, pp. 127 to 131.

of the third rune ᚦ; the Oghams with five twigs representing the runes with roots, of which the fifth rune ᚴ is the type; the remaining four runes being represented by Oghams with four twigs.

The Oghams are undoubtedly older than the 8th century, when the incursions of the Scandinavian vikings began, and in the Ogham tract contained in the Book of Ballymote are referred to the Tuatha de Danann of Irish legend, who represent in all probability an earlier Scandinavian immigration. There is, however, reason to believe that the Oghams actually originated in Pembroke, where there was a very ancient Teutonic settlement, possibly of Jutes, who, as is indicated by the evidence of runic inscriptions found in Kent, seem to have been the only Teutonic people of Southern Britain who were acquainted with the Gothic Futhorc.

CHAPTER IX.

THE IRANIAN ALPHABETS.

§ 1. *The Primitive Scripts of Persia.* § 2. *The Pehlevi Alphabets.* § 3. *The Indo-Bactrian Inscription of Asoka.* § 4. *The Indian Numerals.* § 5. *The Armenian and Georgian Alphabets.*

§ 1. THE PRIMITIVE SCRIPTS OF PERSIA.

THE primitive Semitic alphabet divided into three branches, the Phœnician, the Joktanite, and the Aramean. Each of these became the parent of a family of Aryan alphabets. From the Phœnician came the alphabets of Europe, which have been just discussed; from the Joktanite came the alphabets of India; while the Aramean alphabet not only exterminated the other Semitic scripts of Western Asia but also became the source of the alphabets employed by various non-Semitic races in the provinces of the Persian empire.

For this group of alphabets a general appellation is required. Pehlevi, the name most commonly adopted, is open to serious objection, since it is also used specifically to denote one member of the group, the

central alphabet used for the coins and inscriptions of the Sassanian kings. Inasmuch as the alphabets in question prevailed in provinces of the Achæmenian empire, the term 'Persian' might have been employed had it not been already appropriated as the designation of a national variety of the Neskhi Arabic, modified to suit the requirements of modern Persian speech; not to say that the alphabet developed under Darius out of the cuneiform writing (1st Achæmenian) has a prior claim to the title of 'Persian.' The term 'Persic' suggests a misleading connexion with 'Persian,' while Zendic and Arianian are also open to objection.

The word IRANIAN, as yet unappropriated as an alphabetic designation, is perhaps less unsatisfactory than any other name that can be found, since it may fairly be applied to the oldest as well as to the more modern forms of the alphabet of the old Persian empire.[1]

The history of the Iranian alphabets is involved in considerable obscurity, on account of the extensive blanks in the series of monumental records. Owing to the preservation of a continuous series of records, extending over nearly three thousand years, it has been possible to trace with reasonable exactitude the affiliation of the western branches of the Semitic alphabet. But as regards those portions of the

[1] Iran, the name now given by the Persians to their kingdom, is the regular modern form of the ancient name Ariyana or Airyana.

Persian realm which lay to the east of the Euphrates, the case is different. During nine important centuries, from the fall of the Assyrian empire down to the establishment of the Sassanian monarchy, when the record again becomes continuous, the epigraphic silence in these eastern regions is almost complete, being broken only by the occasional and doubtful legend on a coin, and by a solitary monument, preserved for one-and-twenty centuries, by strange good fortune, in a remote corner of a distant Indian province.

For this silence it is not difficult to account. After the destruction of Nineveh we have access to no such storehouse of epigraphic material as is afforded by the spoils of the Assyrian palaces. For monumental purposes the cuneiform writing continued to be used in the Achæmenian empire. till it was replaced by the Greek alphabet, which followed in the wake of the conquests of Alexander. Even on the moneys of the foreign princes who ruled over the Eastern provinces of Persia, Greek legends are nearly universal. Hence coins, the last resource of the epigraphist, fail us in this case.

There can, however, be no doubt that, side by side with the cuneiform and Greek writing which were employed for monumental records and numismatic legends, a local variety of the Aramean alphabet held its place for ordinary purposes. All examples of this script must, however, be held to have perished with

the perishable materials employed for their reception—papyrus, skins, the bark of trees, and tablets of wax or unbaked clay.

That the two modes of writing, the cuneiform and the alphabetic, were in simultaneous use, even for official purposes, before the fall of the Assyrian empire, is proved by evidence which has already been brought forward. Thus in the bilingual contract tablets found in the archives of Nineveh, an official cuneiform text is accompanied by the signatures of witnesses and contracting parties, and even by memorial dockets, in Semitic letters, while the Assyrian lion weights, with their bilingual inscriptions, cuneiform and alphabetic, are also of an official character, and indicate the extensive use of alphabetic writing for commercial purposes. So also when two scribes are represented in Assyrian sculptures as engaged side by side in recording public transactions, we see, in intentional contrast to the cuneiform manipulation of the one, the representation of a second amanuensis, who uses a reed and a parchment scroll. In such a case it can hardly be doubted that the design is to portray a scribe writing in alphabetic characters.

Thus at this early period, before the destruction of Nineveh, there is abundant evidence of the contemporaneous employment of the two modes of writing, and it is impossible to suppose that alphabetic writing, with its superior simplicity and convenience, should have gone out of use during the succeeding centuries,

although no monumental evidence of the fact has been preserved. This surmise is reduced to a certainty when, at a later period, we find in existence a whole family of alphabets which can only have descended from some very ancient alphabet which prevailed throughout the Persian empire.

The chief direct evidence of the usage of alphabetic writing comes to us from the extreme East. Some facile form of the graphic art must have been practised in Bactria at the remote period when the sacred books of the Zoroastrians were composed. As early as the 5th century B.C. Darius Hystaspis records, in the Behistun inscription, his restoration of the forgotten text and commentary of the Zendavesta.[1] Hermippus of Smyrna, who lived in the middle of the 3rd century B.C., quoted, and even summarized the contents of the twenty books, each consisting of 100,000 lines, which, he says, had been composed by Zoroaster. Masudi, an Arab historian of the 10th century, also gives an account of the Zendavesta, apparently from authentic sources. He states that it was written on 12,000 cow-hides, in a character invented by Zartusht (Zoroaster). The existence of a Bactrian literature, long before the conquests of Alexander, cannot therefore be disputed. Nor is there any reason to doubt that a variety of the Aramean alphabet was the vehicle adopted for this literature. The great inscription of

[1] See, however, Darmesteter, *Zend-Avesta*, vol. i., p. lii.

the Buddhist king Asoka, at Kapur-di-giri, on the confines of India and Afghanistan, which was written in the middle of the 3rd century B.C., remains as a solitary but imperishable monument of a wide-spread knowledge of alphabetic writing, which extended to the remotest province of the Achæmenian empire. Just as caps of certain denuded geological formations, crowning the extreme summits of lofty hills, testify to the former existence, over extended tracts, of strata which elsewhere have disappeared, so the Kapur-di-giri record must be regarded as an isolated monument of a great Bactrian alphabet in which the Zoroastrian books, and an extensive literature, were in all probability conserved.

To the inscription of Kapur-di-giri may be added the evidence of a nearly contemporary Bactrian coin which was struck by Agathokles in 240 B.C. There are also numerous coins of Indo-Scythian princes belonging to the two succeeding centuries, and these are succeeded by coins of the Parthian kings which bear legends in an Aramean alphabet of the same general character as that used in the inscription of Asoka. Hence we conclude that from a very early period the regions to the east of Iran possessed a peculiar alphabet of the Aramean type. When in the 4th century A.D., both the old cuneiform writing and the Greek alphabet introduced by Alexander's captains, had fallen into disuse throughout the regions east of the Euphrates, this ancient Iranian alphabet, which

had temporarily been submerged as it were, reappeared with the revival of Iranian nationality, and held exclusive sway, till it was finally displaced by the alphabet introduced by the Arabian conquerors in the 7th century of our era.

It was from the Aramean type of the Semitic alphabet that these Iranian scripts must have been derived. They all exhibit the characteristic Aramean test, namely, the opening of the loops of the closed heads of the Phœnician letters, which took place at the end of the 7th century B.C. But as the Kapur-di-giri inscription, which is the earliest monument of the Iranian alphabet, dates from the middle of the 3rd century B.C., it is plain that the Iranian alphabet could not have arisen earlier than the beginning of the 6th century B.C., or later than the end of the 4th.

The Aramean alphabet, before it broke up into national types, passed through successive chronological stages of development. The scanty monuments of the epoch to which the origin of the Iranian alphabet must be assigned consist of 5th and 4th century coins, struck by the Persian satraps of Asia Minor, and of somewhat later records from Egyptian tombs. The nearest congener of the Iranian alphabet seems to be the Aramean of the Satrapies. The earlier of the Palmyrene types, though too late to be regarded as the direct progenitor of the Iranian alphabet, yet, from its geographical proximity, exhibits useful illustrative forms. It must, however, be remembered that the Iranian alphabet

has to be explained by collateral forms only, its direct progenitor being unknown.

The alphabets of the Iranian group may be classified as follows:—

1. THE INDO-BACTRIAN.
2. THE PEHLEVI.
3. THE ARMENIAN.
4. THE GEORGIAN.

A comparative Table of these alphabets will be found on the next page.

Owing to the defects of the monumental record the definite chronological affiliation of these alphabets cannot be exhibited. Of the Indo-Bactrian we practically possess only a single monument separated by an interval of centuries from its nearest congeners. It has left no descendants, it has no near collaterals, and its immediate parentage is unknown. The Armenian and Georgian must also be regarded as isolated alphabets, as they are only known from manuscripts of comparatively late date, though they exhibit survivals of very primitive forms, the Armenian *m* and *g* (col. ix. Nos. 13 and 3), for instance, being practically identical with the corresponding Indo-Bactrian forms which are older by more than a thousand years. The ancient forms of the Armenian and Georgian letters which are given in the Table[1] have been copied from the oldest

[1] In the Armenian and Georgian alphabets additional letters were borrowed from the Greek, and others were obtained by differentiation from the primitive characters. These have been omitted in the

THE IRANIAN ALPHABETS.

	ARAMEAN.		PEHLEVI.					INDO-BACTRIAN.	ARMENIAN. (Reversed.)	GEORGIAN. (Reversed.)	
			ARSACIDAN.		SASSANIAN.		PARSI.				
	SATRAPIES & EGYPT.	PALMYRA.	Coins & Gems.	Haji-abad B.	Haji-abad A.	Coins.	MS.	KAPUR-DI-GIRI.	Oldest MSS.	Oldest MSS.	
	Sec. iv. & iii. B.C.	Sec. ii. A.D.	Sec. i. & ii. A.D.	Sec. iii A.D.	Sec. iii. A.D.	Sec. iv. to vi. A.D.	Modern	Sec iii. B.C.	Sec. ix. A.D.	Sec. xi. A.D.	
א											1
ב											2
ג											3
ד											4
ה											5
ו											6
ז											7
ח											8
ט											9
י											10
כ											11
ל											12
מ											13
נ											14
ס											15
ע											16
פ											17
צ											18
ק											19
ר											20
ש											21
ת											22
	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	

known codices in the Bibliothèque Nationale at Paris. They have also been reversed, these scripts being written from left to right, instead of from right to left, as is the case with the other alphabets with which they have to be compared.

In this Table the three Pehlevi alphabets can alone be regarded as a series arranged in chronological sequence. The Arsacidan forms are taken from the coins of the Parthian kings, and from the inscription of Shahpur I. at Haji-abad. The Sassanian letters are from the Sassanian version of the same inscription and from later Sassanian coins. The Parsi letters in column vii. are the 'Zend' types used in printing-offices, which are imitations of the characters found in 16th century manuscripts of the Avesta.

The affiliation of the Iranian alphabets, as has been shown, can only be determined indirectly. The two types of the Aramean alphabet which have been taken for comparison must therefore be regarded merely as collateral forms.[1]

Table, those forms only being inserted which appear to be direct descendants from the twenty-two Aramean letters.

[1] With regard to the relations subsisting between these alphabets the following comparisons may be made:—

Cols. i., iii. Satrapies and Proto-Pehlevi. Cf. Nos. 5, 6, 8, 12, 13, 15, 21, 22.

„ ii., iv. Palmyrene and late Arsacidan. Cf. Nos. 7, 8, 10, 12, 17, 19, 20, 22.

„ ii., v. Palmyrene and Sassanian. Cf. Nos. 8, 10, 12.

„ iii., iv. Early and late Arsacidan. Cf. Nos. 1, 3, 5, 6, 13, 14, 15, 20, 21.

§ 2. THE PEHLEVI ALPHABETS.

The central stem of the Iranian alphabet goes by the general name of PEHLEVI, which is used to designate the alphabet of Persia in its successive stages, from the first century of the Christian era, when its peculiarities begin to manifest themselves, down to its Indian survival at the present day.

The word Pehlevi is probably equivalent to Parthvi, the Parthians having been the rulers of Persia while the Pehlevi language and alphabet were in process of formation, just as French is not the language of the Franks, but the language of a country which they conquered. The Pehlevi language presents a remarkable philological enigma. Based on the ancient Persian of the Achæmenian inscriptions, it is largely intermixed with Semitic words which were subjected to the inflexions of Iranian grammar. It thus formed

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Cols. iii., v. Proto-Pehlevi and Sassanian. Cf. Nos. 1, 2, 3, 5, 6, 8, 13, 15.

„ ix., viii., iii. Armenian, Bactrian and Proto-Pehlevi. Cf. Nos. 1, 3, 5, 6, 11, 12, 15, 17, 18, 20.

„ x., v., vi. Georgian and Sassanian. Cf. Nos. 7, 11, 12, 13, 18, 20, 22.

It would therefore seem that the Arsacidan and Bactrian are most closely related to the earlier type of the Aramean, while the Sassanian was derived from the Proto-Pehlevi, but was somewhat influenced by Palmyrene or Western forms. The Georgian apparently belongs to the Sassanian type of the Pehlevi, and the Armenian to the earlier or Arsacidan type. The student may compare the Iranian forms with the other Aramean alphabets given in the Table in vol. i., p. 250.

an exception to the linguistic law that except in the case of mere jargons, such as dog Latin, law French, or the pigeon English of Canton, mixed languages do not exist. Scientific philologists doubted whether such an artificial form of speech could have been at any time the spoken language of the Persian people, and they conjectured that it must have been confined to a class of learned pedants at the court of the Sassanian princes.

The sagacity of Prof. Haug has now solved this curious riddle. The Pehlevi proves to be not a mixed language, but only a mixed script. We have already seen[1] how the Semitic Assyrians, adopting the cuneiform characters invented by the primitive Turanian people of Babylonia, used them partly as phonograms or symbols of sounds, and also as signs of thoughts or ideograms, which developed into logograms or symbols of words. A somewhat similar process occurred when the Aryan Persians adopted a Semitic alphabet. When Persian was written by the Aramean scribes, they employed the Semitic letters to spell the Persian words, and also optionally used the accustomed graphic representation of Semitic words as logograms to denote the equivalent Persian words. Thus the letters מלכא (*malka*, 'king') are used on coins to denote the Persian word *Shah*, in the same way that we ourselves might read V.R. as 'Queen Victoria,'

[1] See vol. i., p. 45.

or A.M. and P.M. as graphic equivalents of the words 'morning' and 'afternoon.'[1]

The Pehlevi alphabet, strictly speaking, is the alphabet of the Sassanian period which conserves the monuments of the Pehlevi language; but the name is conveniently employed in a somewhat looser sense to comprehend also the earlier alphabet of the Parthian empire, as well as the later alphabet now used by the Parsis for the transcription of the Zendavesta.

The history of the Pehlevi alphabet is intimately connected with the political fortunes of Persia. On the partition of the empire of Alexander, Central Asia, as far as the Hindu Kush and the Indus, fell under the rule of Seleucus Nicator. In 256 B.C. Arsaces in Parthia, and Diodotus in Bactria, successfully rebelled against Antiochus Theos, the second successor of Seleucus.[2] The sixth Arsacid, Mithridates I. (174–136 B.C.), united all Iran under his supremacy. Greek princes still ruled in Bactria on the east, and in Syria on the west, but the central provinces were never again subjected to Western influence.

[1] We have many similar logograms in constant use, such as lbs., £. s. d., cwt., dwt., oz., viz., &c., *e.g.*, *i.e.*, &, D.V., N.B., R.S.V.P., R.I.P., Xmas, and it is easily conceivable that the number might have been as considerable in Pehlevi, in which Semitic logograms were employed to represent about 400 words of most constant recurrence, thereby giving a language which, when spoken, was almost purely Aryan, and the appearance, when written, of a semi-Semitic jargon. See West, *Pahlavi Texts*, p. xiii.

[2] See, however, Gardner, *Parthian Coinage*, p. 3.

Parthia proper was little more than the modern province of Khorasan, but the natural features and position of this region, and the hardy and warlike character of its inhabitants, who were probably of Scythic race, enabled them, like the Mongols at a later time, to establish a great Oriental empire. For nearly five centuries the invincible Parthian horsemen protected Central Asia from foreign conquest. At no time did there exist any universal Roman dominion, there was always a second great empire, which divided with Rome the sovereignty of the earth, which repeatedly defied and defeated the Roman legions, and whose court, rivalling in magnificence that of the Achæmenian kings, afforded to exiles a welcome refuge from the vindictiveness of Rome. Hence the so-called history of Parthia is really the history of Western Asia for the eventful centuries during which the Arsacid empire lasted. The great Asiatic revolution which took place in 226 A.D. marks the revival of Iranian nationality. Persia passed from the dominion of Scythian or Tartar kings to the rule of native Persians. The long line of the twenty-nine Arsacid princes was brought to an end by the revolt of the satrap Ardeshir (Artakshatr or Artaxerxes), a grandson of Sassan, through whom he traced his lineage to the royal Achæmenian line. In three great battles the Parthians and Persians contended, the Parthian king Artabanus was slain, and the Arsacid empire, which had lasted for 476 years, was replaced

by the monarchy of the Sassanids, itself destined to endure for a nearly equal period.

Ardeshir successfully endeavoured to revive the feeling of Iranian patriotism, and the glories of the Achæmenian empire. He restored the ancient Magian fire-worship, and caused a bas-relief, which represents him on horseback trampling on the prostrate figure of Artabanus, to be carved on the rock at Nakhsh-i-Rustam, near Persepolis, close to the portrait of Darius, his reputed ancestor. The inscription is triliteral, in the Pehlevi of West and East Iran with a Greek translation. His son Shahpur (Sapor I., 241–272 A.D.) recorded his victory over the Romans on the same historic rock. Shahpur is represented on horseback, the Emperor Valerian kneeling before him as a suppliant. Shahpur has also left his effigy on the rock at Nakhsh-i-Rajab, near Persepolis, and in the cave at Haji-abad. The inscriptions which accompany these sculptures, and the long series of Pehlevi legends on the Sassanian coins, supply abundant materials for the history of the Pehlevi alphabet in its second stage.

The rise of Islam brought the Sassanian monarchy to an end. Persia was almost the first country to be attacked. Ctesiphon was taken in the year 16 A.H., and an immense booty was sent to the Khalif Omar at Medina. Four years later, with the great battle of Nehavend, fought in 641 A.D., in which 100,000 Persians are said to have fallen, Zoroastrianism as a

national faith, and the last of three Iranian empires, came to an end, after the Sassanian dynasty had ruled Persia for upwards of four centuries.

After the Arab conquest the Pehlevi character was replaced by Arabic,[1] which is now the alphabet of Persia. Many of the fire-worshippers, preferring exile to conversion, fled from Persia. On the western coast of India, from Surat to Bombay, there are nearly 70,000 descendants of the refugees who emigrated from Iran at the time of the Arab conquest. They still speak Parsi, an ancient Persian dialect, and they preserve to the present day their primitive religion, their venerable literature, and the ancient alphabet in which their sacred books are written. According to a tradition which they preserve, their ancestors first took refuge on the island of Hormuz in the Persian gulf, from whence they passed to Din on the coast of Gujarat, which they reached about the end of the 9th century A.D.

From the foregoing historical sketch it will be seen that the development of the Pehlevi alphabet may be naturally divided into three successive stages, corresponding to the three epochs of Iranian history. These three Pehlevi types are (1) The ARSACIDAN, which was developed in Persia during the period of the Parthian empire, 256 B.C. to 226 A.D.; (2) the

[1] Pehlevi legends are found on the coins of the Arab Khalifs down to the year 81 A.H., after which Kufic became the official character, and the Pehlevi alphabet finally disappeared from Persia.

SASSANIAN, or Pehlevi proper, which prevailed under the dynasty of the Sassanids, 226 to 651 A.D.; (3) the PARSI or Indian Pehlevi, often called the Zend alphabet, which was used by the fugitives who fled to India from the Arab conquerors.

The earliest form of the Pehlevi alphabet is that which is found on the coins of the Parthian kings and satraps. By its discoverer, Sir Henry Rawlinson, it was called the 'Parthian' alphabet. But as it had no special connexion with Parthia, properly so called, this appellation has been disused. It was then called 'Persepolitan,' the principal inscriptions in which it is used having been found in the neighbourhood of Persepolis. Since many of the Sassanian inscriptions come also from the same region this name was relinquished in favour of the term Chaldæo-Pehlevi, which, however, is neither compendious nor specially appropriate. But as this alphabet was that distinctively employed under the Parthian dynasty, the term least open to objection seems to be ARSACIDAN, which will therefore be adopted in these pages.

The earliest type of the Arsacidan alphabet goes by the name of Proto-Pehlevi (p. 236, col. iii). The monuments in this character are scanty in the extreme, owing to the fact that the Greek alphabet was ordinarily used by the Parthian kings during the first two or three centuries of their empire. Having no literature, art, or civilization of their own, they seem to have prided themselves on their imitation of Greek

culture. The Arsacids call themselves on their coins "friends of the Hellenes." Greek was spoken at their court, and Plutarch tells us that plays of Euripides were acted before Orodes, the opponent of Crassus. Under the Parthian rule the language of the Greek colonists no doubt survived in the provincial cities, which were self-governing and semi-independent communities. As Mr. Gardner has well observed, the language and alphabet of the Greeks must have been to the Parthian conquerors of Persia what the Latin language and literature were to the Goths and Franks of the 8th century. This explains the fact that the earlier Parthian coins are in a good Greek character. In the reign of Gotarzes (42–50 A.D.) the Greek legends become barbarous, and finally unintelligible, the Greek letters being strewn about the surface of the coin in a way which shows that the mint-masters were ignorant of Greek,[1] and strove merely to produce some colourable resemblance of an earlier coin. This conventional imitation of a Greek legend finally disappears about the year 130 A.D., and henceforward a new legible character, which was plainly quite familiar to those who used it, takes its place upon the coins.

[1] In these later Parthian coins the Greek words are often hopelessly undecipherable, and even when, with the help of the earlier coins from which they were imitated, they can be made out, the most absurd errors are found, such as νος for νιος; κεκαλνσνος for κεκλημενος, or φιλελληχος for φιλελληνος, while even the dynastic name Αρσακου becomes Αριανου.

This new alphabet, evidently a long-established form of writing, now at last officially adopted, is not identical with, or very closely related to, any other alphabet which has been discovered, its nearest known congeners being the cursive Aramean, which is found some four or five centuries earlier on the coins of the Achæmenian satraps of Asia Minor, and the Indo-Bactrian character, older by more than three centuries, used by Asoka at Kapur-di-giri.

The characteristic peculiarities of this early Arsacidan alphabet are first discernable on the coins of Artaxias of Armenia (c. 189 B.C.), the letters *vau*, *gimel*, *yod*, *samekh*, and *shin* showing a tendency to depart from the Aramean type in the direction of the Pehlevi forms. The development of these tendencies may be traced through the Armeno-Parthian mintages to the close of the dynasty, and are seen also on the coins of the kings of Characene. A coin of Sanabares, struck at the beginning of the Christian era, may be said to exhibit the earliest actual example of the Pehlevi alphabet. A century later the names of the Arsacidan kings appear regularly on the Parthian coins in Pehlevi letters, with the title *malka*, 'king.'[1] The final

[1] The series of Pehlevi legends begins with Mithridates IV. (107 to 113 A.D.) and is continued on the coins of Vologeses IV., Vologeses V., Vologeses VI., Artabanus V., ending with Artavosdes, the last Parthian king (227 A.D.). They are engraved in plates 6 and 7 of Gardner's *Parthian Coinage*. An alphabet compiled from these coins is given in column iii. of the Table on p. 236.

form of the Arsacidan alphabet is shown in the biliteral inscriptions of the two first of the Sassanian kings—namely, in the inscription of Ardeshir Babekan at Nakhsh-i-Rustam and the inscription at Haji-abad[1] of Shahpur I. (240-273 A.D.).

The SASSANIAN alphabet appears in a fully-developed form in the elaborate inscriptions of the founders of the Sassanian empire.[2] Subsequent to the date of these great inscriptions the monuments of the Pehlevi alphabet are mainly numismatic, with the exception of the "Devonshire Amethyst," which is the seal of Varahran IV. (c. 380 A.D.). From the time of Ardeshir to that of Narses (226–302 A.D.) the alphabet of the coins agrees with that of the early inscriptions. During the next three centuries the alphabet undergoes gradual modification till about the year 600, when it has approximately assumed the form found in the oldest copies of the Avesta.

Thus the history of the Sassanian alphabet may be

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[1] A cast of this inscription, taken by Sir Henry Rawlinson, is in the possession of the Royal Asiatic Society. An excellent photographic copy is published in the *J. R. A. S.* for 1868. The alphabet is given in column iv. of the Table on p. 236.

[2] The chief of these are the trilingual inscription of Ardeshir Babekan, the founder of the Sassanian monarchy, at Nakhsh-i-Rustam, near Persepolis, and the bilingual inscription of his successor Shahpur, at Haji abad, from which the alphabet in column v. of the Table on p. 236 has been obtained. There is another inscription of Shahpur at Nakhsh-i-Rajab, and an inscription of Narses at Shahpur.

said to begin with the inscription of Ardeshir Babekan (226–240 A.D.), the first of the Sassanian kings. But even then the forms of the letters plainly prove that it was already of considerable antiquity. The fact that both Ardeshir and Shahpur should have thought it necessary to commemorate their deeds by means of biliteral inscriptions, in the Sassanian as well as in the Arsacidan alphabet, proves that for a considerable antecedent period the two Pehlevi alphabets must have existed side by side.[1] The Sassanian alphabet is more cursive[2] than the Arsacidan, but the distinction between the two was doubtless mainly geographical, the one having been the alphabet of Eastern, and the other of Western Iran.

Although both the Pehlevi alphabets were in contemporaneous use at the date of the earliest inscriptions, yet the Arsacidan is plainly the more primitive of the two, agreeing with respect to a considerable number of letters with the Kapur-di-giri inscription,[3] which is earlier by several centuries. It was derived in all probability from the ancient

[1] The above-named coin of Sanabares, struck in the year 2 A.D., has an Arsacidan *s* on one side, and a Sassanian *a* on the other.

[2] The more cursive character of the Sassanian forms may probably be explained by the nature of the writing materials employed—possibly birch-bark, as Mr. Thomas has suggested.

[3] The student should compare these two alphabets, which are given in columns iv. and viii. of the Table on p. 236. The letters numbered 2, 3, 4, 6, 7, 11, 12, 13, 15, 17, 19, and 20 exhibit resemblances more or less conspicuous.

alphabet of Eastern Iran, a sister alphabet of the Aramean of the Satrapies.

The Sassanian alphabet, on the other hand, must be referred to a subsequent stage of the Aramean. It corresponds not so much to the fourth century Aramean and the third century Indo-Bactrian, as to the earliest form of the Palmyrene, and to the primitive conjectural type of the Arsacidan. But its connexion with the Palmyrene as well as with the Arsacidan was somewhat remote, as will be seen if we remember that these three very distinct alphabets were nevertheless absolutely contemporaneous. Shahpur, from whose biliteral Haji-abad inscription we obtain the Arsacidan and Sassanian alphabets given in the Table, was the contemporary of Odenath, husband of Zenobia, whom he twice defeated. Hence the Palmyrene alphabet in its final stage, the Sassanian, and the Arsacidan, were used at the same period in adjacent regions; the Arsacidan having the Palmyrene to the west, and the Sassanian to the east. After the death of Shahpur both the Palmyrene and the Arsacidan alphabets fell into disuse, the Syriac of Edessa prevailing in the west, and the Sassanian in the regions towards the east.

The final stage of the Pehlevi script commonly goes by the name of the Zend alphabet, since it is the vehicle in which the existing copies of the Zend Avesta are preserved.[1] The name however is misleading,

[1] The word Zend, more correctly written Zand, denotes the 'com-

inasmuch as the so-called Zend language is the most primitive form of Iranian speech,[1] while the Zend alphabet was the last development of the Iranian script. The Zend language and the Zend alphabet are therefore separated from each other by an interval of some twenty centuries. It would therefore seem more accurate to call it the PARSI alphabet, rather than by the more usual name of Zend. The character which is now used by the Parsis for the transcription of their sacred books, is a modified form of the alphabet found in the oldest copies of the Zend Avesta. Though none of these manuscripts are believed to be earlier than the 14th century, the forms of the letters seem to have been

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mentary' on the Avesta or 'revelation.' The sacred literature of the Parsis consists of the 'Avesta,' which contains the ancient Magian litanies and laws, together with the 'Zand' or Pehlevi translation and commentary. European scholars have converted the Avesta with its Zand into the 'Zend-Avesta,' and have further taken Zend to be the name of the original language in which the Avesta was written, which is much as if we should designate the language of the Pentateuch and the Psalms as 'Talmud.' See West, *Pahlavi Texts*, p. x.

[1] "Zend" is the old language of Eastern Iran, it has no literature except the Avesta, and has left no linguistic descendants. It ranks with Sanskrit and Pali as being the vehicle of one of the great religions of the East. Parsi, or Pazend, was the vernacular of Eastern Persia, and is nearly identical with the language of the Shah-nameh of Firdusi, written in the 10th century A.D. Modern Persian is the descendant of the sister dialect of Western Persia, as represented in the language of the Achæmenian inscriptions, corrupted with Arabic words and idioms. The Iranian languages are :—1. Zend; 2. Achæmenian Persian (5th century B.C.); 3. Pehlevi (3rd century A.D.); 4. Parsi (10th century A.D.); 5. Neo-Persian.

transmitted with little alteration from the Sassanian period. The alphabet is nearly identical with that found in Indian inscriptions in the Pehlevi character, the earliest of which is assigned to the end of the 9th century. This again agrees very closely with the characters on the coins struck towards the close of the Sassanian monarchy, that is, from the reign of Chosroes II. to the time of the Arab conquest.

Although the forms of the letters have been so little modified during the last twelve centuries, yet the Pehlevi alphabet has undergone extensive amplifications in its Indian home. The oldest MSS. exhibit five additional characters, which are not found on the coins. These were obtained from the older letters by differentiation. This process was subsequently extended, the nineteen Semitic letters which are found in the Sassanian alphabet having been developed, in modern Parsi, into seventeen vowels and thirty-six consonants, constituting one of the most elaborate of existing scripts. The difficulty is increased by the assimilation of the forms of several letters, and by the use of numerous conventional ligatures,[1] the

[1] Thus the symbol 𐭩 stands for *y*, *i*, *e*, *d* and *g*, and when doubled is identical in form with 𐭮 *s*. This last symbol has seventeen separate phonetic values, such as *dag*, *gag*, *gad*, *yi*, *di*, *gi*, *s*. Again, 𐭭 *sh* is undistinguishable from the ligature of 𐭩 *y*, *i*, *e*, *d*, *g* and 𐭠 *a*, and may have sixteen different values. Hence this script presents a remarkable example of the ambiguities produceable by the 'law of least effort.' See vol. i., pp. 161 to 166; and West, *Pahlavi Texts*, p. xvi.

number of separate graphic symbols with which the reader has to be acquainted amounting to no less than 168.

To explain in detail the development of the fifty-three letters of the Parsi alphabet out of the nineteen Sassanian characters would not be difficult, as the materials are ample,[1] but the intrinsic interest of the subject would hardly justify the dedication of the considerable space that would be needed. It is a matter rather for specialists, than for the student of the general history of the alphabet. It may suffice to append a Type-table of the more usual Parsi or 'Zend' letters, as now used in printed books.

PARSI OR ZEND ALPHABET.

𐬀	*a*	𐬇	*iy*	𐬊	*g*	𐬑	*th*	𐬮	*l*
𐬁	*â*	𐬈	*û*	𐬋	*gh*	𐬒	*d*	𐬯	*r*
𐬂	*ę*	𐬉	*uv*	𐬌	*ṅ*	𐬓	*dh*	𐬰	*v*
𐬃	*ā*	𐬊	*e*	𐬍	*j*	𐬔	*n*	𐬱	*w*
𐬄	*æ*	𐬋	*ê*	𐬎	*c*	𐬕	*p*	𐬲	*s*
𐬅	*â*	𐬌	*o*	𐬏	*ž*	𐬖	*f*	𐬳	*š*
𐬆	*i*	𐬍	*ô*	𐬐	*z*	𐬗	*b*	𐬴	*š*
𐬇	*î*	𐬎	*k*	𐬑	*t*	𐬘	*m*	𐬵	*h*
𐬈	*u*	𐬏		𐬒	*ḍ*	𐬙	*y*	𐬶	*hv*

The process by which the vowel signs were elabo-

[1] These developments can easily be traced by the aid of the three admirable *Pehlevi Schrift-Tafeln* compiled by Dr. Euting to illustrate Hübschmann's *Iranische Studien*, which appeared in Kuhn's *Zeitschrift für vergleichende Sprachforschung* in 1878 (vol. xxiv., N. F. iv.). Of these Tables extensive use has been made in the present chapter.

rated is, however, worthy of note, as it illustrates similar alphabetic developments. Here, as in other cases, the adaptation of a Semitic alphabet to an Aryan language necessitated the evolution of symbols for the vowels which play so important a part in Aryan speech. Four breaths and semivowels, *aleph*, *he*, *vau*, and *yod*, were taken over, and converted, by differentiation and combination, into seventeen vowel signs.[1]

The history of the recovery of the Iranian alphabet and literature forms a chapter of almost romantic interest in the arid annals of Philology. In the middle of the last century a portion of the Avesta was attached by an iron chain to a wall of the Bodleian, and was regarded as a mysterious treasure of which the key was lost. Fired with the ambition of unlocking the secret of Zoroaster, Anquetil Duperron, then a mere lad studying at Paris, enlisted as a common soldier with the object of reaching India. Landing at Pondicherry, he mastered Persian and Sanskrit, and thus

[1] With regard to *'ayin*, specialists are inclined to believe that it disappeared altogether, as it represented no Persian sound. This, however, cannot be regarded as beyond dispute. An inspection of the Table on p. 236 will show that one of the Arsacidan letters, col. iv., Nos. 1 and 16, differs considerably from the Aramean *aleph*, but is almost identical in form with the Aramean *'ayin* (cols. i. and ii., No. 16). See, however, Lenormant's explanation, in *Jour. Asiat.* 1865, (Ser. vi., vol. vi., p. 220.), and compare the name and form of the Armenian equivalent. The Parsi letters 𐭠 *a*, 𐭠𐭥 *â*, 𐭠𐭩 *ā*, 𐭠𐭭 *å*, are all descended from this doubtful character.

equipped for his enterprise he succeeded after years of hardships and adventures in reaching Surat, the goal of his hopes, where, worming himself into the confidence of the Parsi priests, he obtained from them the key to their ancient alphabet and language, and copies of their sacred books, hitherto guarded with the utmost jealousy. After an absence of eleven years he returned to Paris, and the next day deposited in the Bibliothèque Royale the treasure won at the cost of so many perils. Seven years of labour were devoted to the task of preparing a translation of the Zend Avesta, which was at last published in 1771, only to be received by the learned world with mockery and derision, as a puerile and audacious forgery. The controversy raged for half a century, and it was not till twenty years after the death of this intrepid pioneer of science that the researches of Rask and Burnouf set the question at rest, and finally established the genuineness and unique importance of the treasure so hardly won.[1]

Meanwhile Sylvestre de Sacy,[2] by the aid of Anquetil's researches and of the Greek version of the bilingual inscription at Nakhsh-i-Rustam, which had been copied by Ker Porter, succeeded in deciphering the early Sassanian alphabet. The alphabet having once been recovered, numerous scholars, among whom the names of Ouseley, Tychsen, Longpérier, Dorn, Ols-

[1] See *Mémoires de l'Académie des Inscriptions*, vol. xxxi., and Darmesteter, *Zend-Avesta*, pp. xiv. to xxiv.

[2] De Sacy, *Mémoire sur quelques antiquités de la Perse.* Paris, 1793.

hausen, Thomas, and Mordtmann deserve special notice, devoted themselves to the explanation of the legends on the very numerous coins of the Sassanian dynasty. To a countryman of our own, Mr. Edward Thomas, belongs the final honour of having deciphered the oldest of the Pehlevi alphabets, the Arsacidan. This was done by means of the copy of the bilingual inscription of Shahpur at Haji-abad, obtained by Sir H. Rawlinson. The researches of Spiegel, Haug, Windischmann, Westergaard, Darmesteter, Hovelacque, West, and Hübschmann, have now fulfilled the hopes and crowned the labours of Anquetil, by creating the great and fruitful science of Iranian philology.[1]

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[1] The student may consult vol. i. of *Prinsep's Essays*, by Thomas; Lenormant, *Études sur l'alphabet Pehlevi*, in the *Journal Asiatique*, 6th series, vol. vi., 1865; Lepsius, *Das ursprüngliche Zend Alphabet*, in the Berlin Transactions for 1862, pp. 293 to 383; Olshausen, *Die Pehlewi-Legenden auf den Münzen der letzten Sâsaniden* (Kopenhagen, 1843); Levy, *Beitrage Z. D. M. G.*, vol. xxi.; Longpérier, *Essai sur les Médailles des rois Perses de la Dynastie Sassanide* (Paris, 1840). There are also numerous papers by Mordtmann on Sassanian coins in the *Z. D. M. G.*, and by Thomas in the *Numismatic Chronicle* and the *J. R. A. S.* Nothing can be better than the reproductions of Arsacidan coins in Gardner's *Parthian Coinage*, a book which contains an excellent sketch of Parthian history. See also Duncker's *History of Antiquity*, vol. v., and Rawlinson's Sixth and Seventh *Oriental Monarchies*. The legends on the coins reproduced in this work cannot, however, be depended on.

§ 3. THE INDO-BACTRIAN INSCRIPTION OF ASOKA.

The earliest monument of the Iranian group of alphabets comes, strange to say, from a region which formed one of the Indian provinces of the empire of Darius. In 1836 a French officer in the service of Runjeet Singh made known the existence of a long inscription in an unknown alphabet engraved on a rock west of the Indus in the direction of Peshawar. It is usually called the Kapur-di-giri inscription, from the name of a neighbouring village. By the labours of Prinsep, Lassen, and Norris it was ultimately deciphered, and it proved to be a version of the fourteen Edicts of Asoka, the grandson of Sandrocottos (Chandragupta), the contemporary of Seleucus Nicator. Asoka, who has been well called the Constantine of the Buddhist faith, ruled over the greater part of India in the 3rd century B.C. From Gujarat on the western coast, to the Bay of Bengal on the east, and throughout the whole valley of the Ganges, transcripts of the edicts of Asoka have been found at various points, engraved on rocks or pillars. Two alphabets of wholly different character and origin were employed. The Kapur-di-giri inscription is written from right to left, in a cursive alphabet of the Aramean, or rather of the Iranian type. The other copies of the edicts are in a totally distinct character, from which all existing Indian alphabets were subsequently derived. Unlike the cursive and slanting Kapur-di-giri script, the writing is square and

monumental, running from left to right. This alphabet will be discussed at length in the chapter on the Indian alphabets, of which it became the parent; for the present, it need only here be said that whatever its affinities may be, it certainly could not have been, like the other, of Aramean origin. For the alphabet of the Kapur-di-giri inscription various names have been proposed, none of which, however, is entirely free from objection. It has been called the Arian, the Cabulese, and the North Asoka alphabet. The term Ariano-Pali is used in the *Corpus Inscriptionum Indicarum*, while M. Senart designates it as the "North-Western Alphabet," a suggestion which has been approved and adopted by Prof. Max Müller. But any name bestowed from the point of view of Indian Palæography is necessarily misleading, the true connexion of this alphabet being with the Iranian group, of which it is the extreme eastern outlier. It is the Iranian of the east, rather than the Indian of the north-west.

The name "Kapur-di-giri Alphabet," which is frequently employed, is empirical rather than scientific—it obscures the important fact that this alphabet extended over vast regions of Central Asia, while it is not even accurate, since the actual locality from which comes the cardinal monument of this alphabet is not Kapur-di-giri, as is usually asserted, but the contiguous village of Shahbaz-garhi.

The "Bactrian Alphabet," a designation proposed

by Mr. Thomas, though more appropriate than any other as yet suggested, takes no account of the fact that this alphabet was not only the alphabet of Bactria, but still more emphatically that of Afghanistan and the Punjab, whence its chief monuments have been obtained. On the whole, the name INDO-BACTRIAN seems less open to objection than any other, and is therefore adopted in these pages.

With regard to its geographical extension, the Indo-Bactrian alphabet seems to have prevailed throughout the whole region between the great Persian desert and the Indus, that is to say in Ariana, (Herat) Margiana, (Merv) Bactriana, (Bokhara) Alexandria Arachosia, (Candahar), and in India throughout the Punjab.

Its earliest and most important monument is the version of the edicts of Asoka (264—223 B.C.) at Kapur-di-giri. This inscription cannot be earlier than 253 B.C., and was in all probability written in the year 251. In the same alphabet, and of almost contemporary date, is a coin of Agathokles, struck about 240 B.C., which is of importance as showing the wide range of this alphabet over both kingdoms, Bactrian and Indian, at the period when its earliest monuments make their appearance. Its history is continued by the coins of the Greek princes of Ariana and India, which extend down to the year 120 B.C., and these are succeeded by the coins of the Indo-Scythian kings,[1] the Sacæ and

[1] About two centuries after the conquests of Alexander one of the great migrations of nations took place. A Scythian horde swept

Tochari, which range from 120 B.C. to 79 A.D. Under the Indo-Scythians this alphabet received its greatest geographical extension, having been carried as far as the Sutlej, as is proved by an inscription of Kanishka found at Bahawalpur. About the end of the 1st century A.D. the Indo-Bactrian alphabet seems to have become finally extinct in India, being replaced by the rival Indian alphabet. In the west, the earliest Bactrian coins exhibit as a rule Greek types and legends. Subsequently the Greek type disappears, and after the reign of Eukratides (c. 180 B.C.) the coins have Greek legends on one side and Bactrian on the other.

The introduction of the Indo-Bactrian alphabet into India must be assigned to a period considerably earlier than the reign of Asoka, as it makes its appearance in the Kapur-di-giri inscription in a greatly expanded form, the twenty-two Aramean consonants having been developed into an elaborate alphabet of at least 35 letters; five vowels, the cerebral series of consonants, and

down from the frontiers of China and submerged Bactria. The Macedonians were driven from Cabul into the Punjab. Greek captains—Menander, and afterwards Apollodotus—passing through the Khyber, conquered the valley of the Indus, and reduced even Gujarat and Kashmir. The Greeks were afterwards crushed between the advancing Scythian hordes and the great Indian empire of Magadha. The Hellenic influence in India is apparent both in the architecture, and in the coins of the Gupta dynasty, which are of the Greek type. The coins of the Sah kings of Gujarat even have Greek legends.

numerous aspirated letters, all of which are unknown in the Aramean alphabet, having been evolved.[1]

General Cunningham assigns the evolution of the Indo-Bactrian alphabet to the end of the 4th century B.C., when the provinces west of the Indus were ceded by Seleucus Nicator to Chandragupta, the grandfather of Asoka. This conclusion is difficult to admit. The assigned cause is insufficient, since the introduction of a western alphabet would be connected with the advance rather than with the retrogression of western influence. Again, the period of fifty or sixty years which would thus be obtained seems wholly inadequate to bring about the wide diffusion, as well as the expansions and differentiations of the Iranian alphabet, which had been effected in the time of Asoka and Agathokles, processes which would necesssarily demand lengthened periods of time. Moreover, and this alone seems fatal to the theory, if an alphabet had been obtained by Chandragupta from Seleucus it would not have belonged to the Iranian type, but

[1] That the Indo-Bactrian alphabet did not originally contain all the letters, appears from the fact of the soft aspirates having been developed out of mere ligatures. Thus the character

𐨒	(*gh*) is the ligature	𐨑	+ 𐨁	(*g* + *h*)
𐨟	(*dh*)	„	𐨆 + 𐨁	(*d* + *h*)
𐨨	(*bh*)	„	𐨆 + 𐨁	(*b* + *h*)

The origin is indisputable, but the modification of form postulates a considerable period of evolution. So the resemblances found in the dental and cerebral series of consonants imply a common origin. For example, 𐨦 (*n*) and 𐨯 (*n*) are plainly differentiated forms, as well as *t̤h* and *th*, or *d̤* and *d*. See p. 301, note.

would have been the Greek alphabet, which the Macedonians persistently introduced throughout the eastern regions which they overran.

An earlier date and different political conditions seem on every ground to be demanded for the introduction into India of the Iranian writing. In the first place we possess definite testimony which proves that the art of writing was practised in the valley of the Indus prior to the Seleucidan period. Nearchus, who accompanied Alexander in his expedition into the Punjab, tells us that the people wrote letters on cloth, which was smoothed for the purpose by being beaten. It must, I think, be held that this Punjab script can have been none other than the Iranian alphabet. Thus the Sanskrit word *lipi* 'writing,' as Dr. Burnell has pointed out, is not, as has been thought, derived from the root *lip*, 'to smear,' or from *likh*, 'to scratch,' but, as the dialectic form *dipi* proves, is a corruption of the Achæmenian word *dipi*, 'writing,' 'edict.' This is an indication that the earliest knowledge possessed by the Indian nations of the art of writing came from Persia. For its introduction a probable date and occasion can be assigned. In the year 500 B.C. the Persians under Darius conquered the greater portion of the Punjab, and Herodotus asserts that India, by which he probably means the valley of the Indus, was formed into the 20th satrapy of the Persian empire, paying an annual tribute of 360 talents of gold. In the Persepolis inscription we find that

India constituted the 21st and the 13th of the Persian provinces. The fact that the range of the Indo-Bactrian alphabet was approximately coextensive with the limits of the eastern satrapies of Persia seems to suggest that its introduction and diffusion was a consequence of the Persian conquest. On every ground of historical probability the naturalization of the Persian alphabet in India must be connected with the conquests, not of the Greeks, but of the Persians, who would necessarily employ the art of writing, to them so familiar, in the administration of their Indian satrapies.

Two centuries, therefore, before the Seleucidan period there was opportunity and sufficient cause for the introduction into the Punjab of the Iranian alphabet, and this date would allow adequate time for its adaptation to the needs of the Prakrit idioms, and for the development of the cerebrals, the aspirated consonants, and the vowels, which we meet with in the inscription at Kapur-di-giri.

The complete alphabet of the Kapur-di-giri inscription will be given when we come to consider the other Indian alphabets, with which it has curious relations.[1] It may here suffice to refer to the table of the Iranian alphabets (p. 236) which contains those letters which exhibit the most direct connexion with the Aramean forms.[2]

[1] See chapter x., § 3.

[2] With regard to most of these letters, as Nos. 2, 3, 4, 6, 7, 8, 11,

§ 4. THE INDIAN NUMERALS.

The Indo-Bactrian alphabet possesses a special interest for ourselves, inasmuch as it became, in a curiously roundabout way, the source from which were derived some of the ciphers which are designated as the Arabic, or more correctly as the Indian numerals. These names indicate a considerable portion of the history of the ciphers. They were introduced by the Arabs into Spain, from whence during the 12th and 13th centuries they spread over Europe, not, however, without considerable opposition. The bankers of Florence, for example, were forbidden, in 1299, to use them in their transactions, and the Statutes of the University of Padua ordain that the stationer should keep a list of the books for sale with the prices marked "non per cifras, sed per literas claras." The name 'ciphers,'[1] here used to denote the new numerals, is an Arabic word, and indicates the immediate source from which they were obtained. Their use was at first confined to mathematical works, they were then employed for the paging of books, and it was not till the 15th century that their use became general. The earliest European forms are found in MSS. of the 12th century, and by the 14th century they had practically

12, 13, 14, 15, 19, 20, the affiliation is beyond dispute. Other derivations, especially Nos. 1, 5, 9, 16, 22, are only put forward conjecturally.

[1] Arabic *ṣifr*, Italian *zefiro*, 'zero.'. Cf. French *chiffre*.

assumed their modern shapes. The 12th century forms differ very slightly from the Gobar or "dust" numerals, used by the Arabs in the 10th century, which are found in a MS. of that date written at Shiraz, in Persia. According to the tradition of the Arabs they were brought from India about the 8th century. Comparing them with the contemporary Sanskrit and Kawi numerals this tradition is plainly seen to be correct. These Sanskrit numerals have been shown by Dr. Burnell to be slightly modified forms of the numerals used in inscriptions of the Vengi dynasty, which belong to the 4th or 5th century A.D. These again can be traced to the numeral signs used in the inscriptions of the Western Caves, which are assigned to the 1st and 2nd centuries of our era.

The question now arises as to the ultimate origin of these Cave numerals, which are proved by a chain of evidence to be the remote ancestors of our present forms. That they were not generally used in the time of Asoka is shown by the numbers being denoted in his edicts by parallel lines 𑁒 𑁓 𑁔 𑁕 𑁖. Their origin is therefore reduced within definite chronological limits. They have every appearance of having originally been letters from some alphabet, and I have elsewhere endeavoured to show[1] that they are letters derived from the Indo-Bactrian alphabet. At the time of their origin two alphabets were contending in

[1] See the *Academy*, January 28th, 1882.

north-western India, the southern alphabet prevailed in the struggle for existence, the obolescent Bactrian letters, however, conveniently surviving as numerical signs.

There are two ways in which alphabetic characters may be employed as numerals. The letters may either be taken in their alphabetic order, as in Hebrew or Greek, or the initial letters of the words denoting the numbers may be similarly employed. The Indians adopted the latter method, the initial letters of the numbers being thus used as abbreviations for the number, instead of writing the word at full length. The annexed Table will show how this was done.

It will be seen that the Cave numeral for 5 is identical in form with the Indo-Bactrian letter 𐨐 (*p*), which is the initial of the Sanskrit *panchan* 'five.' The case of 4 is perhaps more convincing on account of the greater complication of the forms, so that any merely accidental similarity is more improbable. In Sanskrit 'four' is *chatur*, and the Cave cipher for four closely resembles the Indo-Bactrian letter which has the power of *ch*, and is almost undistinguishable from the slightly differentiated character for *chh*. Six and seven are *šaš* and *saptan* in Sanskrit, and here again the cave numerals closely resemble two of the Indo-Bactrian sibilants. The sibilants appear, however, to have been interchanged, but the difficulty is not so serious as it might seem, since the interchange

of sibilants is a recognized feature of the north-western dialect.

THE ARABIC CIPHERS.						Letters of the Indo-Bactrian Alphabet.
European.		Gobar.	Indian.			
Sec. xiv.	Sec. xii.	Sec. x.	Sec. x.	Sec. v.	Sec. i. A.D.	Sec. ii. B.C.
1	١	١	١	⌒	—	
2	٢	٢	٢	⌒⌒	=	
3	٣	٣	٣	⌒⌒⌒	≡	
4	٤	٤	٧	⌒⌒⌒⌒	⊀	𐨤 = chh
5	٥	٥	٤	⌒⌒⌒⌒⌒	⊦	𐨥 = p
6	٦	٦	٥	٥	⊦	𐨦 = s
7	٧	٧	٦		⊦	𐨧 = ṣ
8	٨	٨	٧		⊦⊦	𐨨 = aṣ?
9	٩	٩	٨		⊦⊦⊦	𐨩 = n
0	٠	·	٠			𐨪 = d

The origin of the ciphers for 8, 9, and 10 is not so obvious, but it seems not impossible to refer the cipher for 8 to the conjectural ligature[1] *aṣ*, standing for *aštan* 'eight;' that for 9 to *n*, the initial of *navan*, 'nine;'

[1] This ligature does not actually occur in the Kapur-di-giri inscription, but the form given in the Table is that which analogy would lead us to expect.

and the cipher for 10, which is found in a Punjab inscription written in the reign of Kanishka, to *d*, the initial of *dasan*, 'ten.'

The signs for the three first numerals are of more doubtful origin. In the Cave inscriptions these numbers are denoted by — = ≡, from which the curved Vengi symbols were manifestly obtained. From these it is quite possible that the 10th century Devanagari ciphers may have been derived, although, till intermediate forms are discovered, it is impossible to speak positively. But as in the inscriptions of Asoka the numbers 4 and 5 are expressed by IIII and IIIII, a notation which was subsequently superseded by the initials of the words *chatur* 'four' and *panchan* 'five,' it is not impossible that the method of acrologic notation may have had a further extension, the ciphers for 1, 2, and 3 having been derived from the initial letters of the words *eka*, *dva*, and *tri*, to which they bear some resemblance. Probably the question can only be settled absolutely by the discovery of transitional forms for these three ciphers.[1]

[1] The curious resemblances between some of the Indian and Egyptian numerals have not been satisfactorily explained. The two systems are most probably independent, the resemblances being merely superficial and accidental. The Neo-Pythagorean numerals, however, are probably related to the Egyptian ciphers. Soon after the appearance of my article in the *Academy*, an essay on *The Genealogy of Modern Numerals*, by Sir E. C. Bayley, was read before the Asiatic Society (J. R. A. S., vol. xiv., N.S. pp. 335—376). The writer argues that the Indian numeral system was of "an eclectic

The Table exhibits the chief stages in the history of the Arabic ciphers according to the foregoing hypothesis. The first column gives the 14th century ciphers, which are practically identical with those now in use. The second column contains the earliest European forms, from MSS. of the 12th century. The Gobar numerals of the Arabs come next. The three following columns show the Indian ciphers of the 10th, 5th, and 1st centuries A.D., and these are followed by the suggested alphabetic prototypes, taken from the Indo-Bactrian coins and inscriptions of the 2nd and 1st centuries B.C.

§ 5. THE ARMENIAN AND GEORGIAN ALPHABETS.

The Armenian and Georgian alphabets may be regarded as the only living representatives of the great

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character," some signs being of Egyptian origin, others Phœnician, and some possibly cuneiform. The numerals for 4, 5, 6, 7, 8, 9, he considers to be the Bactrian letters *chh*, *p*, *g*, *a*, *b*, *h*. M. Bertin (*Academy*, Feb. 11, 1882) believes that the Indian ciphers were developed in India out of the Egyptian system.

[1] The history of the Arabic ciphers has been investigated by Woepcke, *Mémoire sur la Propagation des Chiffres Indiens*, by Pihan, *Signes de Numeration*, and by Cantor in the *Zeitschrift f. Math. und Physik*, 1856. The successive European forms are given by Wattenbach, *Anleitung zur lateinische Palæographie*, p. 88; and by Friedlein, *Gerbert, die Geometrie des Boethius, und die indischen Ziffern*, plate vi. The Indian forms, together with an excellent discussion of the question, will be found in Burnell's *South Indian Palæography*. Cf. Holle, *Tabel van Indische Alphabetten*, plates 30—35.

Iranian alphabet; the Parsi, so far as it can be said to survive, being an ecclesiastical script, used and understood only by a learned class.

The exceptional preservation of these two alphabets, and their successful resistance to the encroachments of Syriac, Greek, and Arabic, is doubtless due to special circumstances. In the case of the Georgian it may be attributed to the peculiarity of the language and the inaccessibility of the mountain region inhabited by the people; while in addition to these causes the powerful conservative influence of religious isolation has aided in the preservation of the script of the Armenians, who never having accepted the decrees of the Council of Chalcedon, constitute an independent Jacobite sect, under their own patriarch.

These alphabets also claim attention on another ground. As a rule, the evolution of graphic signs being a gradual and almost insensible process, has escaped the notice of contemporary historical writers, and the problem of their origin has to be worked out by means of such epigraphic materials as can be obtained from the evidence of inscriptions and coins. In this instance we have a notable exception to the ordinary rule. No ancient inscriptions having been preserved,[1] and the numismatic evidence being singularly scanty, it becomes necessary to rely on liturgical

[1] None of the codices are earlier than the 9th or 10th century A.D. Of the coins the most important is one of Gorig IV., assigned to the 11th or 12th century. See Langlois, *Numismatique de l'Arménie.*

fragments of mediæval date. But in place of the usual epigraphic evidence we have to deal with the unique circumstance of a full and venerable tradition which relates the conditions under which these alphabets were believed to have originated. Our information comes from the Armenian historian, Moses of Khorene, who attributes the origin of both the Armenian and Georgian alphabets to St. Mesrob, who flourished about the year 400 A.D. He had been a secretary at the court of the Armenian kings, Varazdates and Arsaces IV., where the 'Persian' writing was used. After a time he resigned his post in order to devote himself to a religious life. The Armenians had adopted Christianity about a century before this time, and the Persians, with whom the political connexion was close, being Zoroastrians, the Armenian church leant for support on Constantinople. To render his church independent of the Persians on the one hand, and of the Greeks on the other, and not improbably prompted by the Armenian king, Mesrob determined to discover for his fellow-countrymen an alphabet suitable for ecclesiastical use, which they did not then possess. He consulted with Plato, a Greek rhetorician at Edessa, and with Ruphanus, a learned monk of Samos, and obtained from them a knowledge of the alphabet used by the Greeks. With this aid he succeeded in constructing an Armenian alphabet "on the pattern of the Greek writing," the letters, according to the tradition, being revealed to him from heaven in

a vision. With the help of Isaac, the Armenian patriarch, he translated the New Testament into Armenian, using apparently the Peshito version, and introduced his new alphabet into Armenia, with the exception of the districts ecclesiastically subject to the Archbishopric of Cæsarea, in which the Greek alphabet was used instead of the "Assyrian," which prevailed elsewhere. In 406 A.D. the Mesropian alphabet was adopted by an edict of the Armenian king.

In the year 410 Mesrob went among the Iberians (*i.e.* Georgians), and in concert with the Georgian king Artchal (413—446 A.D.) furnished them also with a suitable alphabet of 28 letters.

The significance of this account has now to be determined. It throws light, to begin with, on the curious relations which are found to exist between the Armenian and Georgian alphabets, and possibly accounts for their somewhat artificial character. But here we are confronted with a problem which has occasioned considerable controversy. The statement of Moses of Khorene that Mesrob constructed his alphabet "on the pattern of the Greek writing" may be taken to mean either that he took the Greek alphabet and adapted it to the needs of Armenian speech, or that he merely remodelled the defective local alphabet in use among the Armenians, conforming it in general style and appearance to the more regular and ornate type of Byzantine MSS. The text does not absolutely exclude either of these interpretations. The question

whether the Armenian belongs fundamentally to the Greek or to the Iranian group of alphabets must be determined on internal evidence.[1]

Dr. Friedrich Müller, in a very able essay,[2] has constituted himself the champion of the fundamentally Aramean character of the Armenian and Georgian alphabets, while the arguments in favour of a Greek origin have been urged by Gardthausen.[3] The evidence on either side is partly historical, and partly palæographical.

That the Armenians were in possession of an alphabet before the time of Mesrob, is certain not only from the mintages of early Armenian kings, but also from a passage in Philostratus, from which we learn that the Armenians had an alphabet of their own as early as the 2nd century A.D. This alphabet must have belonged to the Iranian group, as appears from the statement of Moses of Khorene, that in some parts of

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[1] A third hypothesis, wholly untenable, has been advocated by Brosset, *Éléments de la Langue Géorgienne* (Paris, 1837). He contends that the Armenian and Georgian alphabets were constructed by Mesrob on the basis of the Indian Nagari, with the addition of a number of arbitrarily invented symbols. It may suffice to say that the superficial resemblances, on which M. Brosset relies, disappear when the older forms of the Nagari letters are taken into account.

[2] Müller, *Ueber den Ursprung der armenischen Schrift* (Transactions of the Vienna Academy for 1864).

[3] Gardthausen, *Ueber den griechischen Ursprung der armenischen Schrift*, in the *Z. D. M. G.*, vol. xxx., 1876.

Armenia the Greek alphabet was employed instead of the "Assyrian" letters which were used elsewhere. By "Assyrian" letters, the Arsacidan alphabet must be meant. This conclusion is confirmed by the legends on the early Armenian coins, which are in an alphabet of the Arsacidan type, as well as by the early connection of Armenia with the Parthian monarchy. The employment of the "Persian," that is, the Sassanian letters, by Mesrob in his office of royal secretary, is explained by the political dependence of Armenia upon Persia.

Mesrob's very superficial knowledge of Greek and his familiarity with the Pehlevi alphabets which were used by his countrymen, together with the fact that he was unable to introduce his new alphabet into that part of Armenia in which the Greek letters were already known, are reasons for believing that the new alphabet of Mesrob was based on the indigenous Iranian script, and not an adaptation from the Greek.

The internal evidence is to the same effect. The long interval of four or five centuries which elapsed between the time of Mesrob and the oldest existing fragments of the Armenian script make it unsafe to attach much importance to mere external similarity in the forms of the characters, which are liable to undergo extensive mutations in the course of centuries. But taking such evidence for what it is worth, it will be found that the oldest forms of the Armenian and

Georgian letters when reversed[1] can be deduced with no great difficulty from the Pehlevi forms, while they rarely exhibit any appreciable resemblance to the Greek.[2]

Putting aside all such seductive but treacherous evidence, it will be found, as in other cases, that the names and order of the letters supply an argument whose cogency cannot be disputed.

From the Table of the Armenian[3] and Georgian

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[1] The old forms of the Armenian and Georgian letters, reversed, are given in columns ix. and x. of the Table on page 236. The Armenian forms have been taken from a stray leaf preserved in the British Museum containing part of the tenth chapter of St. John's Gospel, which is assigned to the 9th century (Add. MSS. 19,735), compared with two copies of the Gospels, one of the 10th century in the Bibliothèque Nationale at Paris, the other of the 11th century in the British Museum (Add. MSS. 19,727). Three facsimiles of Armenian MSS., one of the 11th century, and two of the 16th, are given by Silvestre, *Pal. Univ.*, pl. xlii. The old Georgian letters are taken from a 10th century Book of Liturgies at Paris (MSS. Geor. No. 2), and from a somewhat later palimpsest liturgy for Lent (*ib.*, No. 17). The British Museum, unfortunately, does not possess any ancient Georgian MSS. These alphabets are nearly identical with those obtained from the oldest Vienna MSS., which are given by Dr. Friedrich Müller in his essay on the origin of the Armenian alphabet, to which I am under heavy obligations.

[2] For instance, by referring to the Iranian Table on p. 236, and comparing the Armenian letters *a*, *b*, *k* and *n* (col. ix., nos. 1, 2, 11, 14) with the corresponding Pehlevi forms in col. iv., and also with the Greek letters **A B K N**, the reader may easily determine for himself the relative probability of an Iranian and a Greek origin.

[3] This Table contains the modern type forms of the letters as used in printed books. The ordinary Armenian capitals and minuscules will be found in columns i. and ii., and the cursive characters in

alphabets given on the next page it will be seen that the Georgian[1] alphabet has preserved almost unimpaired the primitive Semitic arrangement, while in the Armenian, though the order of the letters has been to some extent disturbed, the primitive names have, in several cases, been preserved with so little change as to admit of identification.[2]

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column iii. The names *da*, *za*, *ra*, &c. are pronounced dah, zah, rah, and *khe*, *pe*, *re*, &c. as khay, pay, ray. The duplicate phonetic values correspond to the pronunciation in the two Armenian dialects. The Eastern dialect, which represents the older pronunciation, is spoken in Tiflis, and by the Armenians of Persia and India; the newer Western dialect being used in Constantinople, in the Turkish provinces of Asia Minor, and in the Armenian convents at Venice and at Vienna. Thus the 2nd, 3rd, and 4th letters, which are sounded as *b*, *g*, *d*, at Tiflis, have become *p*, *k*, *t*, at Constantinople.

[1] The Georgian alphabet is called the *Anban* from the names of the two first letters. The Anban has two distinct forms, the civil and the ecclesiastical, differing so greatly that they might be regarded as separate alphabets. The oldest alphabet, now confined to liturgical use, is a square and monumental uncial alphabet of thirty-nine letters, called the Khutsuri, or 'sacerdotal,' from the word *Khutsi*, a 'priest.' The capital and minuscule forms are given in columns iv. and v., p. 277. The other alphabet is the Mkhedruli Kheli, or 'soldier's hand,' given in col. vi. It is a cursive rounded script of forty letters, used for ordinary purposes. The Khutsuri does not differ very greatly from the ancient forms, from which both alphabets are descended. On the Georgian alphabet, see Brosset, *Éléments de la Langue Géorgienne.*

[2] The present order is for the most part of great antiquity, as is proved by the discovery of an ancient Armenian Grammar found some fifty years ago among the treasures of the Bibliothèque Nationale at Paris. Dioynsius Thrax, who lived at the end of the

THE ARMENIAN ALPHABETS.

Names.	Capitals.	Minuscules.	Cursives.	Values.	Numerical Values.	Names.	Capitals.	Minuscules.	Cursives.	Values.	Numerical Values.
Aib	Ա	ա	ա	*a*	1	Mien	Մ	մ	ſ	*m*	200
Bien	Բ	բ	բ	*b, p*	2	He *or* Ye	Յ	յ	յ	*h', y*	300
Gim	Գ	գ	գ	*g, k*	3	Nu	Ն	ն	ն	*n*	400
Da	Դ	դ	դ	*d, t*	4	Sha	Շ	շ	շ	*sh*	500
Yetch	Ե	ե	ե	*e, y*	5	Wo	Ո	ո	ո	*oo, wo*	600
Za	Զ	զ	զ	*z*	6	Jha	Չ	չ	չ	*jh, j*	700
E	Է	է	է	*ē*	7	Pe	Պ	պ	պ	*p, b*	800
Et	Ը	ը	ը	*ĕ*	8	Che	Ջ	ջ	ջ	*ch*	900
Tto	Թ	թ	թ	*tt, th*	9	Ra	Ռ	ռ	ռ	*rr*	1000
Zhe	Ժ	ժ	ժ	*zh*	10	Se	Ս	ս	ս	*s*	2000
Ini	Ի	ի	ի	*i*	20	Viev	Վ	վ	վ	*v*	3000
Liun	Լ	լ	լ	*l*	30	Tiun	Տ	տ	տ	*t, d*	4000
Khe	Խ	խ	խ	*kh*	40	Re	Ր	ր	ր	*r*	5000
Tsa	Ծ	ծ	ծ	*ts, dz*	50	Ttso	Ց	ց	ց	*ts, dz*	6000
Kien	Կ	կ	կ	*g, k*	60	Hiun	Ւ	ւ	ւ	*u*	7000
Kwo	Հ	հ	հ	*h*	70	Ppiur	Փ	փ	փ	*pp, ph*	8000
Dza	Ձ	ձ	ձ	*dz, ts*	80	Khe	Ք	ք	ք	*kk, kh*	9000
Ghat	Ղ	ղ	ղ	*gh*	90	O	Օ	օ	օ	*o*	10000
Je	Ճ	ճ	ճ	*j, jh*	100	Fe	Ֆ	ֆ	ֆ	*f*	20000
	I.	II.	III.				I.	II.	III.		

THE GEORGIAN ALPHABETS.

Names.	Khutsuri. Capitals.	Khutsuri. Minuscules.	Mkhedruli. Cursives.	Values.	Numerical Values.	Names.	Khutsuri. Capitals.	Khutsuri. Minuscules.	Mkhedruli. Cursives.	Values.	Numerical Values.
An	Ⴀ	ⴀ	ა	*a*	1	Ttan	Ⴒ	ⴒ	ტ	*tt*	300
Ban	Ⴁ	ⴁ	ბ	*b*	2	Un	Ⴓ	ⴓ	უ	*u*	400
Gan	Ⴂ	ⴂ	გ	*g*	3	Vi	Ⴔ	ⴔ	ვ	*vi*	
Don	Ⴃ	ⴃ	დ	*d*	4	Par	Ⴕ	ⴕ	პ	*p*	500
Eni	Ⴄ	ⴄ	ე	*e*	5	Kan	Ⴖ	ⴖ	ქ	*k*	600
Win	Ⴅ	ⴅ	ვ	*w, v*	6	Ghan	Ⴗ	ⴗ	ღ	*gh*	700
Zen	Ⴆ	ⴆ	ზ	*z*	7	Qar	Ⴘ	ⴘ	ყ	*q*	800
He	Ⴇ	ⴇ	ჱ	*h'*	8	Shin	Ⴙ	ⴙ	შ	*sh*	900
Than	Ⴈ	ⴈ	თ	*th*	9	Chin	Ⴚ	ⴚ	ჩ	*ch*	1000
In	Ⴉ	ⴉ	ი	*i*	10	Tsan	Ⴛ	ⴛ	ც	*ts*	2000
Kan	Ⴊ	ⴊ	კ	*kk*	20	Dzil	Ⴜ	ⴜ	ძ	*dz*	3000
Las	Ⴋ	ⴋ	ლ	*l*	30	Ttsil	Ⴝ	ⴝ	წ	*tts*	4000
Man	Ⴌ	ⴌ	მ	*m*	40	Ttshar	Ⴞ	ⴞ	ჭ	*ttsh*	5000
Nar	Ⴍ	ⴍ	ნ	*n*	50	Khan	Ⴟ	ⴟ	ხ	*kh*	6000
Ye	Ⴎ	ⴎ	ჲ	*y*	60	Kkhar	Ⴠ	ⴠ	ჴ	*kkh*	7000
On	Ⴏ	ⴏ	ო	*o*	70	Jan	Ⴡ	ⴡ	ჯ	*j*	8000
Ppar	Ⴐ	ⴐ	პ	*pp*	80	Hae	Ⴢ	ⴢ	ჰ	*h*	9000
Zhan	Ⴑ	ⴑ	ჟ	*zh*	90	Hoe	Ⴣ	ⴣ	ჵ	*hoi*	10000
Rae	Ⴒ	ⴒ	რ	*r*	100	Fa	Ⴤ	ⴤ	ფ	*f*	
San	Ⴓ	ⴓ	ს	*s*	200				ჳ	*ĕ*	
	IV.	V.	VI.				IV.	V.	VI.		

Taking first the Georgian alphabet, it will be seen that a Greek origin is out of the question; letters which had disappeared from the Greek alphabet being retained in their primitive stations. Thus the sixth Georgian character is *v*, a letter which had dropped out of the Greek alphabet nine or ten centuries before the time of Mesrob. It is quite impossible that the *digamma* should have been found in an alphabet obtained from a Greek monk in the 5th century A.D., retaining its primitive alphabetic position, and its ancient value. Yet this is what must be actually maintained if the Georgian alphabet is to be regarded, as Gardthausen contends, as merely a remodelled form of the Greek alphabet. Again, in the Greek alphabet the eighth letter had for many centuries lost its power as an aspirate, and had become simply a vowel, but in Georgian it retains its primitive value. The eighteenth Georgian letter is a dental sibilant, evidently representing the Semitic *tsade*, which disappeared at a very early period from the Greek alphabet. One of the corresponding Armenian characters retains the primi-

2nd century B.C., wrote a compendious Greek Grammar which for several centuries was the standard work used in schools. The Paris manuscript is an Armenian translation of this Grammar, made apparently not long after Mesrob's time, and adapted for teaching Armenian instead of Greek. From this work we learn the number and order of the Armenian letters, and several of their names. See the French translation by Cirbied, *Grammaire de Denis de Thrace* (Paris, 1830), who gives in a note on pp. 9—11 an excellent account of the phonetic powers of the Armenian letters. See also Petermann, *Grammatica Linguæ Armeniacæ* (Berlin, 1837).

tive name in the easily recognizable form of *ghat* or *ghadh*.

The names of the Georgian letters have undergone so much assimilation that they yield no very certain inferences; but in the Armenian alphabet, though the order has been disturbed, the ancient names are occasionally preserved with so little alteration as to make it possible to identify them. Thus the alphabetic station corresponding to that of *'ayin* (Arabic *ghain*) is occupied by an Armenian guttural bearing the name *ghien* or *kien*. Neither the value nor the name could have been obtained from *omicron*, the Greek descendant of this letter. Again, the Armenian *kwo* represents the Semitic *qoph*, a letter long disused in Greek; the name *mien* is also plainly derived from *mim*, and not from the Greek *mu*; while *gim* or *kim*, the third Armenian letter, must have come from *gimel* (Arabic *jim*), and not from *gamma*.

The foregoing considerations prove conclusively that the Greek alphabet could not have been, as Gardthausen contends, the basis on which the Armenian and Georgian alphabets were constructed.[1]

[1] Gardthausen's Greek hypothesis hardly requires detailed refutation. His comparison of the forms of the letters is singularly futile. For his Greek prototypes he does not confine himself to contemporary forms, but arbitrarily ranges over all epochs, up to the 2nd century B.C. He seems to be unacquainted with the Pehlevi forms, to which as a rule the Armenian letters bear a closer resemblance than they do to the Greek. The case of the letters ϕ and χ, admittedly added by Mesrob from the Greek alphabet, proves

There is, however, ample evidence that the local alphabets, which were remodelled by Mesrob, were supplemented and completed from Hellenic sources. In both alphabets, Armenian and Georgian, the same Greek letters have been borrowed, and placed after the primitive Iranian or Aramean characters.[1] Thus we have after the letter *t* :—

Armenian.	Georgian.	Greek.
Ր *u*	Ყ *v*	Υ *u*
Փ *p*, *ph*	Ფ *p*, *ph*	Φ *ph*
Ք *k*, *kh*	ქ *k*	Χ *kh*

In addition to these borrowed letters, the Armenian alphabet appears also to have been remodelled "on the pattern of the Greek writing," as Moses of Khorene asserts. Mesrob doubtless desired to see the Liturgies and Gospels of the Armenian Churches rivalling in regularity and beauty the books used by the Greeks. The divine vision of which we read in the tradition was doubtless a dream, in which his mind unconsciously

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nothing, while the evolution of the Armenian vowels, and the changed direction of the writing, are phenomena in the history of alphabets so familiar as to be of no argumentative importance.

[1] The addition of these Greek letters to the Armenian and Georgian alphabets is paralleled by the introduction of the Greek signs Y and Z into the Latin alphabet, or by that of six Demotic characters into the Coptic, which in other respects is a Greek alphabet. The Cypriote characters found in the Lycian alphabet, and the Greek vowel signs used in Syriac, are also examples of the process by which defective alphabets are occasionally supplemented.

recalled the appearance of some costly Byzantine codex which had been shown to him by the monk Ruphanus.

Besides adding the three Greek letters, and probably also altering the direction of the writing,[1] Mesrob seems simply to have taken the local Pehlevi alphabet, and conformed it to the style of the contemporary Greek manuscripts, changing the irregular, sloping, cursive Pehlevi forms into a square and regular uncial script, upright and geometrical, and giving definite shapes to the ambiguous characters, so that an ancient Armenian codex is not very dissimilar in general aspect to a Greek uncial manuscript of the same age.

What is called the 'invention' of the Armenian and Georgian alphabets by St. Mesrob must therefore have been an operation analogous to the 'invention' of the Mœso-Gothic alphabet, which is attributed to Ulphilas. We know that Ulphilas took certain Gothic runes and conformed them to the pattern of the contemporary Byzantine alphabet. His letters mostly bear the rune names—several of them are simply the old runes with some trifling change of outline; others were borrowed from the Greek alphabet; and some are compromises, partaking partly of the runic forms, and partly of the Greek. Mesrob's innovations were probably much of the same nature.

The conjecture may also be hazarded that Mesrob's

[1] All the Armenian letters have evidently been reversed, whereas in Georgian this operation seems to have been arbitrarily and partially effected.

Armenian and Georgian alphabets were based respectively on the two contemporary forms of the Pehlevi alphabet. The Armenians, a civilized Christian people, were already in possession of an alphabet which, as we learn from Moses of Khorene, prevailed throughout the greater part of their country. He calls it "Assyrian," a name by which the Arsacidan or Chaldæo-Pehlevi script is plainly meant. But there is no reason to suppose that the Georgians, a rude race of mountaineers, possessed any native alphabet; and it would seem that Mesrob constructed his new Georgian alphabet on the model of the Sassanian, or, as Moses of Khorene calls it, the "Persian" alphabet, the dominant and fashionable script of the Persian and Armenian courts, which was officially used by Mesrob in his office of royal secretary. Doubtless he would have used the same model for the Armenians, had they not been already familiar with the older and ruder Arsacidan forms. To introduce a wholly new alphabet into Armenia would have been impossible, but to remodel the old one was practicable and easy.

This hypothesis accounts for the fact, which hitherto has not been noticed or explained, that the Armenian characters manifestly belong to an earlier alphabetic type than the Georgian; numerous resemblances to the primitive Indo-Bactrian letters being found in Armenian, while in Georgian they are almost wholly absent. Taking, for instance, the letter *m* (no. 13 in the Iranian Table on p. 236), it will be seen that the Indo-

Bactrian form is identical with the Armenian,[1] while the entirely different Sassanian form agrees with the Georgian. So again the Armenian *l* (no. 12) has the Indo-Bactrian and Arsacidan form, while the Georgian can be obtained without difficulty from the Sassanian.

Both alphabets, the Armenian and Georgian, in addition to the letters borrowed from the Greek, contain a number of new characters, evidently obtained by differentiation, in order to provide signs for the peculiar sounds, such as the numerous aspirated and sibilated sounds by which these languages are distinguished.[2] That these new symbols are later additions to the original alphabet of Mesrob may be conjectured from the order of the Georgian alphabet. It begins with twenty-one characters, answering to the letters of the primitive Aramean alphabet; next in order we

[1] The same comparison may be extended to other letters, such as *g* (no. 3), *z* (no. 7), *k* (no. 11), *p* (no. 17), *ts* (no. 18), *r* (no. 20), and *t* (no. 22). Again, with regard to *n*, *d*, and *r*, and several other letters, it will be seen that the Armenian letters have the Arsacidan form, while the Georgian are Sassanian in type. The Georgian forms are somewhat more difficult to recognize than the Armenian on account of the tendency to form closed loops, which is apparent to some extent in the Sassanian, and which was carried still further in the Zend. We see this exemplified in the case of the letters *m* and *l*, just cited, as well as in *r*, which is ⵔ in Armenian and ⴐ in Georgian; *s*, which is ⵏ in Armenian and ⴑ in Georgian; and the two dentals *d* and *t*, which are ⵓ and ⵟ in Georgian as compared with ⵔ and ⵙ in Armenian.

[2] Thus Georgian has signs for *s*, *z*, *sh*, *zh*, *ts*, *dz*, *tts*, *ttsh*, *j*, *ch*, *kh*, *gh*, *kkh*.

have four letters borrowed from the Greek alphabet, which may be supposed to be additions made by Mesrob; and these are followed by fifteen letters apparently formed by differentiation, making altogether the forty characters of which the alphabet consists.

In the Armenian alphabet the evidence is not so clear, as there has been considerable dislocation in the order of the letters. The new forms obtained by differentiation are usually found in juxtaposition with the old forms from which they were derived. The first thirty-three letters may however be taken to represent the original Pehlevi alphabet with its subsequent expansions; these are followed by the three Greek letters whose introduction may be attributed to Mesrob, while at the end of the alphabet are two additional Greek letters, Օ and Ֆ, which are known to have been added to the others as late as the 12th century.

It is probable that if the differentiated forms had in both cases been added by Mesrob they would have been dealt with in a similar way in the two alphabets —they would either have been placed at the end of the alphabet, as in Georgian, or next to the parent forms, as in Armenian.

Mesrob's Armenian and Georgian alphabets may therefore be held to have consisted of the primitive Iranian letters given in cols. ix. and x. of the Table on p. 236, together with three or four additional letters obtained from the Greek, the remaining characters being merely differentiations.

CHAPTER X.

INDIAN ALPHABETS.

§ 1. *The Multiplicity of Indian Scripts.* § 2. *Asoka.* § 3. *The Primitive Alphabets of India.* § 4. *The Origin of the Indian Alphabets.* § 5. *The Epoch of Transition.* § 6. *The Vernacular Alphabets.*

§ 1. THE MULTIPLICITY OF INDIAN SCRIPTS.

GIBBON estimated the subjects of the Roman empire, at the time of its greatest extension, at 120 millions. The population of India is more than twice as great, being nearly equal to that of Europe. The distinct alphabets employed by this vast aggregate of human beings outnumber all the other alphabets used in the remainder of the world. Many of them are among the most elaborate that have ever been devised. It is therefore obvious that any detailed treatment of so vast a subject would demand a space wholly disproportioned to any interest which it might possess, save to an extremely limited band of specialists. All, therefore, that will be here attempted is a short account of the more important early inscriptions; a discussion of the origin of the primitive alphabet of India; and

a brief outline of the relations and distribution of existing scripts.

A collection of modern Indian handwritings, such, for instance, as may be found in a lithographed volume, recently published, containing upwards of sixty facsimiles of letters detained in the Dead-Letter Office at Agra,[1] not only exhibits the immense variety of the scripts employed,[2] but discloses the fact that the Indian

[1] Hutchinson, *Specimens of various Vernacular Characters passing through the Post Office in India.* Calcutta, 1877. An earlier and less complete collection was published by the same editor in 1873.

[2] Taken alphabetically, the chief indigenous scripts included in this collection are:—Arowrah (Sind), Assamese (Assam), Baniah (Sirsa and Hissah), Bengali (Bengal and the great cities of the N. W. P.), Bhawalpuri (Bhawalpur), Bisati (N. W. P.), Devanagari (Hindi literature), Dogri (Kashmir), Grantham (Tamil Brahmans), Gujarati (Gujarat and Rajputana), Gurumuki (Sikhs in the Punjab), Kaithi (Hindus in Oudh and N. W. P.), Kanarese (Kanara and Mysore), Karadi (Baniahs in Sind), Khoja (eunuchs and merchants in native States), Lamawassi (Pindi), Lundi (Sealkote), Malayalim (Malabar and Travancore), Mahrathi (Gwalior and Indore), Marwari (merchants in Rajputana), Modi (Oudh), Multani (Multan), Munipuri (Munipur), Muria (merchants in Behar), Nepali (Nepal), Nimari (central Provinces), Ojha (Brahmans in Behar), Pahari (Kumaon and Gurhwal), Parachi (Bhera), Rori (bankers in the Punjab), Saihsi (servants in N. W. P.), Surafi (bankers in N. W. P.), Sarika (Dehrajat of Punjab), Shikapuri (upper Sind), Singalese (Ceylon), Sindi (Sind), Tamil (South of Madras), Telugu (North of Madras), Thul (Dehrajat of Punjab), Tibetan (Tibet), Tulu (Mangalore), Uriya (Orissa). The Trans-Gangetic alphabets, such as Burmese, Siamese, Laos, Cambodian and Peguan, and the numerous alphabets of Java and the Philippines, all of which belong to the Indian group, might also be included in the list.

alphabets furnish a sort of epitome of Indian history, their development being intimately connected with the religious and political fortunes of the country during the last 2000 years.

It is easy to see that the vernacular scripts divide themselves into four or five great classes; these classes being essentially coincident with divisions of race, language, or religion.

The non-indigenous handwritings may first be set aside. Through an Indian Post Office may pass letters written in Chinese, Annamese, Armenian, and Syriac (Karshuni), and others in a variety of European scripts which are descended from the Latin alphabet. The next thing to be remarked is the wide-spread influence of the Mohammedan conquest which preceded the English dominion. This is shown by the various adaptations of the Neskhi Arabic to the necessities of non-Semitic speech: such are the Urdu used for Hindustani by the official class, the Persian employed by educated Mohammedans, the Pushtu of the frontier tribes on the Upper Indus, the Baluchi somewhat further to the south, in addition to peculiar local varieties of the Neskhi alphabet which have arisen in Sind, Bombay, Malabar, and Singapore. Coming to the strictly indigenous alphabets, we find, first, nearly a score descended from the sacred Devanagari script in which the Sanskrit literature is mostly conserved; others derived from the Pali, the old alphabet of the Buddhist scriptures; at least a dozen belonging to the

southern or Dravidian family of alphabets; nearly as many to the Gujarati or western type, and others to the eastern or Bengali class.

These multitudinous scripts, extensive as is their geographical range, dissimilar as they are in their superficial aspect, and even in their structural characteristics, may be traced back to one single source, the alphabet used in the most ancient written monuments of India. There is no uncertainty as to the decipherment, date, or authorship of these primæval records. They consist of the Edicts issued by the great Buddhist monarch Asoka, who ruled over the greater part of India in the 3rd century B.C. Most of them were engraved before Hannibal was born; they are actually older than those primitive monuments of the Latin alphabet, the inscriptions on the tombs of the Scipios. Yet, in spite of this great antiquity, the letters are in many cases as distinct as on the day when they were written: they can be translated with considerable certainty, and it is possible to fix their date almost to a single year.

The difficult study of Indian Epigraphy is greatly facilitated by the fortunate circumstance that all the Indian alphabets have thus diverged from one type of definite date, for the investigation of which such ample materials exist. In other regions the ancient alphabetic forms have to be tentatively deciphered from fragments of mortuary records of conjectural age, or from the curt and obscure legends on battered coins. But in India the

oldest monuments of the primitive writing consist of a magnificent series of contemporaneous inscriptions, written before the divergence of the Indian alphabets began, indisputable in date, in a wonderful state of preservation, repeated again and again, almost in the same words, on rocks and pillars throughout the whole breadth of Hindustan.

The elaborate and beautiful alphabet employed in these records is unrivalled among the alphabets of the world for its scientific excellence. Bold, simple, grand, complete, the characters are easy to remember, facile to read, and difficult to mistake, representing with absolute precision the graduated niceties of sound which the phonetic analysis of Sanskrit grammarians had discovered in that marvellous idiom. None of the artificial alphabets which have been proposed by modern phonologists excel it in delicacy, ingenuity, exactitude, and comprehensiveness.

§ 2. ASOKA.

The darkness and confusion of early Indian history is illumined by one brilliant epoch of about eighty years in duration. Before this period we have to grope in the dim twilight of the Buddhist chronicles, recording mere empty names and uncertain legends; after it comes a great blank of seven centuries, during which we have again to be content with barren catalogues of kings and dynasties compiled from coins and

chronicles, which are hardly more instructive than the lists of Manetho.

The history of our own island only begins when Cæsar stepped upon the Kentish shore. In like manner the charge of the Macedonian cavalry against the elephants of Porus, on the banks of the Jhelum, constitutes the earliest certain landmark in the history of India. Alexander's invasion of the Punjab in 327 B.C. at once brings India into historical relations with the Western world.

In 315 B.C., eight years after the death of Alexander, Chandragupta, a petty Indian Raja, who is to be identified with the Σανδρόκοττος of the Greek historians, drove Eudemus and the Macedonian garrisons out of the Punjab. Overthrowing the petty local dynasties, he founded a powerful empire, which extended from the Sutlej to the Ganges. Seleucus, who had accompanied Alexander on his Indian expedition, advanced against Chandragupta as far as the Indus; but finding him too strong to be successfully attacked, he concluded with him a matrimonial alliance, and made a treaty, ceding the mountain territory west of the Indus. Arrian and Strabo have preserved extracts from a work written by Megasthenes, who was sent from Babylon by Seleucus to reside as his ambassador in the court of Chandragupta at Palibothra (Patna), near the confluence of the Ganges and the Sone. These fragments from the writings of Megasthenes, together with Arrian's epitome of the account written

by Nearchus, who commanded Alexander's fleet, furnish the earliest knowledge of India from the side of Western culture.

From the Indian side a still brighter light is shed by the inscriptions of the Raja Piyadasi, as he calls himself, who is to be identified with a Maurya king who goes by the name of Asoka[1] in the Buddhist chronicles. The grandson of Chandragupta, he was the third monarch of the new dynasty, and ruled over the most extensive empire that India had yet known. Asoka has left his handwriting, as it were, in the Edicts which he caused to be engraved on rock and pillar throughout his extensive dominions, and in the tributary states.

These inscriptions contain internal evidence by which their date can be sufficiently ascertained. In the second and thirteenth Edicts, Asoka mentions as his ally and contemporary the *Yona-raja* or 'Ionian king' Antiyoke (Antiochus Theos, 261–246 B.C.), and also refers to the *chatura rajane*, the 'four Rajas,' Turamaye (Ptolemy II. of Egypt), Antikini (Antigonus of Macedonia), Maka (Magas of Cyrene), and Alikasandare (Alexander II. of Epirus). From these and other indications the date of these Edicts may be fixed between 253 and 250 B.C., the most probable date being

[1] Variously spelt Aṣoka, Aśoka, Ašoka, Açoka, or Asoka, according to the system of transliteration adopted. The Pali form Asoka, which Dr. Hunter adopts, evades typographic difficulties. The second letter is the palatal sibilant श, which is usually sounded like *s* in *sure*.

the year 251.[1] They connect the confused Indian chronology with that of the Western world, making it possible on the one hand to reckon back to the Buddhist era of the Nirvana of Gautama Buddha, while on the other they afford a fixed point of departure from which the dates of the succeeding dynasties of the Sah and Gupta kings can be approximately ascertained.

These Edicts are chiefly concerned with the practical enforcement of the duties enjoined by the Buddhist faith. Few events have more profoundly affected the human race than the birth and teaching of the Buddha, one of the greatest and most original thinkers the world has ever seen. His grand conception of the foundation of a Kingdom of Righteousness, and the scheme which he propounded of a higher and unworldly life as the right means for the attainment of blessedness, has no parallel in the History of Religions save in the Kingdom of Heaven upon Earth which it was the aim of the Founder of Christianity to establish. Setting aside, on the one hand, the habitual practice of asceticism, and on the other the indulgence of the passions, he invited his disciples to tread the eightfold path to blessedness, striving to fulfil the eight cardinal duties—right views, high aims, kindly speech, upright conduct, a harmless livelihood, perseverance in well-doing, intellectual activity, and earnest thought.

[1] Cunningham, *Corpus Inscriptionum Indicarum*, p. 5. See, however, Rhys Davids' *Coins of Ceylon*, p. 42.

This Gospel of purity, mercy, and unselfishness was rapidly and widely accepted, and eagerly followed. It had a brief period of magnificent success, overshadowed and lost through the blind idolatry paid to its founder's memory. The teacher was deified, while his teaching was forgotten; and, after centuries of decline, Buddhism, with its splendid dawn, has sunk into a wretched and grovelling superstition.[1]

It was about two centuries after the death of the Buddha that his religion attained its culminating triumph. Asoka, the greatest of Indian monarchs, embraced its doctrines, and established it as the state religion throughout his vast dominions. He endeavoured to enforce on his subjects the sublime principles of the Buddhist faith, principles so noble that even after eighteen centuries of Christian teaching, to ordinary men they still seem, like the precepts contained in the Sermon on the Mount, ideal and utopian. To compare Asoka with Constantine, as has repeatedly been done, would be to compare him with a man his inferior in every respect, intellectual, moral, and religious; but this is still the closest parallel which history affords. "If a man's fame," says Köppen, "can be measured by the number of hearts which revere his memory, by the number of lips which have mentioned and still

[1] On the doctrines of Buddhism, the standard authorities are Burnouf's *Introduction* and Hardy's *Manual*. Cf. Rhys Davids' *Buddhism*, his *Hibbert Lectures*, and an article by the same writer in the *Fortnightly Review* for December, 1879.

mention him with honour, Asoka is more famous than Charlemagne or Cæsar."

The Edicts of Asoka, which he promulgated from the Indus to Ceylon, enjoin on his subjects the practical exercise of the precepts of goodness, virtue, benevolence, humanity and religion. Dutiful service to parents, kindness to kinsfolk and acquaintance, filial veneration towards spiritual teachers, respectful obedience to masters, kindly consideration for servants and dependents, frugality and temperance in daily life, abstinence from evil speaking and slandering, and a tender regard for the whole animal creation—these are the teachings which Asoka inculcates in his Edicts. They express the universal religion of humanity, and are enforced by the plea that their observance will secure happiness in this world and in the next.

The manifold interest of the inscriptions of Asoka can hardly be exaggerated. They yield a firm standing ground in the vast quagmire of early Indian history; their ethical interest is unique; as authentic records of the primitive Buddhist faith they occupy no mean position in the religious history of mankind; and they are also of supreme palæographical significance, since they conserve in an unimpeachable form the ancient alphabet of India, the source from which have been derived countless Indian scripts of every type—Tibetan, Pali, Nagari, Dravidian, and Malay.

Seventeen versions of the Edicts of Asoka have been discovered. They are engraved on rocks and

pillars in all parts of India, and there are several inscriptions of dedication on caves or rock-cut temples which were constructed by him. There are also six pillar inscriptions, of which the best known are those at Delhi and Allahabad. On five of the pillars are inscribed the six Edicts promulgated in the year 236 B.C., while the rock inscriptions contain copies, more or less complete, of the fourteen earlier Edicts which date from 251 B.C. One of the most perfect covers the eastern face of a huge granite boulder, 75 feet in length and 12 in height, at Girnar, near Junagarh, in Gujarat. There is another copy at Dhauli, in Orissa, on the opposite coast of India. There is a third near Ganjam, 50 miles south of Dhauli; a fourth, in a different alphabet, at Kapur-di-giri, on the frontiers of Afghanistan; and a fifth, 400 miles to the south-east, at Khalsi. There are also six rock inscriptions, containing single Edicts. An imperfect fragment, on which the well-known title of Asoka can however be read, has been brought from Ceylon.[1]

[1] Facsimiles of all the inscriptions, with translations, are given in vol. i. of the *Corpus Inscriptionum Indicarum*. These lithographs are greatly inferior to the beautiful phototypes of the Girnar inscription published by Mr. Burgess in the *Indian Antiquary* and the *Archæological Survey of Western India*. See also Professor Dowson's article on Indian inscriptions in the *Encyclopædia Britannica*, vol. xiii., p. 118; Prinsep's *Essays;* Smith's *Life of John Wilson*. The foregoing sketch of Asoka and his times has been abridged from Wheeler's *History of India*, vol. iii., and Duncker's *History of Antiquity*, vol. iv.

The wide range of these inscriptions shows the extent of the dominion or supremacy of Asoka. They are found from Gujarat on the western coast to Orissa on the east; as far north as Peshawar, as far south as the boundary of the Madras Presidency, if not even in Ceylon. They range over 15 degrees of longitude, and 27 of latitude.

§ 3. THE PRIMITIVE ALPHABETS OF INDIA.

The inscriptions of Asoka are written in three local Pali or Prakrit[1] dialects, evidently derived by long continued detrition from the Sanskrit of the Vedas. Two wholly distinct alphabets are employed. The version at Kapur-di-giri, on the north-western frontier of Asoka's realm, is in the Indo-Bactrian alphabet, which belongs, as has been already shown, to the Iranian group. The alphabet used in the other versions of the Edicts is of far greater importance, as it is the source of the existing Indian scripts.

This alphabet defied for many years the efforts of scholars to decipher it. The key was ultimately discovered by the sagacity of Prinsep. While copying a number of short inscriptions from the pillars of a

[1] The word *prakrita* means 'derived' or 'second-hand,' as distinguished from *sanskrita*, or 'perfect.' The Girnar inscription is in a dialect almost identical with the Pali in which the Buddhist scriptures are written. It differs from the dialect of the Kapur-di-giri inscription on the one hand, and from that of the Orissa copy on the other.

temple at Sanchi he noticed that they all terminated with the same two letters. On the assumption that the inscriptions were records of dedication, he conjectured that these two letters represented the word *dạnam*, 'gift.' He was thus furnished provisionally with the letters *d* and *n*. Supposing that the preceding word would be the name of the donor in the genitive case, he obtained the letter *s*. Applying this key to the inscription on one of the Delhi columns, he made out the frequently recurring name of Piyadasi, by which Asoka designates himself, and enlarged his conjectural alphabet by the aid of analogies supplied by the older forms of the Nagari alphabet. He then found himself able to transliterate and translate the longer and more important set of Edicts engraved on the Girnar rock.[1] Hence the Delhi pillar and the granite boulder at Girnar may fairly take their place in the history of Epigraphy beside the bilingual inscription of Malta, the Rosetta stone, and the rock of Behistun.

The ancient alphabet, thus happily recovered, having been deciphered by Prinsep from an inscription on a *lat* or 'pillar,' was called by him the Lat Alphabet. For obvious reasons this provisional appellation is now generally discarded. The kingdom of Magadha (now Behar) having been the early home of the Buddhist faith, and the seat of the Maurya dynasty to which

[1] See Prinsep's Paper in *J. R. A. S.*, vol. vi.; reprinted in the collected *Essays*.

THE PRIMITIVE ALPHABETS OF INDIA.

I.	II.	III.	IV.	V.
Indo-Bactrian.	Asoka.	Nagari.	Jones.	Max Müller.
I. GUTTURALS.				
𐨑 𐨒	𑀓	क	k	k
𐨓 𐨔	𑀔	ख	kh	kh
𐨕	𑀕	ग	g	g
𐨖	𑀖	घ	gh	gh
𐨗	𑀗	ङ	ṅ	ṅ
II. PALATALS.				
𐨘 𐨙 𐨚	𑀘	च	ch	*k*
𐨛 𐨜 𐨝 𐨞	𑀙	छ	chh	*kh*
𐨟 𐨠 𐨡 𐨢	𑀚	ज	j	*g*
𐨣 𐨤	𑀛	झ	jh	*gh*
𐨥	𑀜	ञ	ñ	ñ
III. CEREBRALS.				
𐨦	𑀝	ट	ṭ	*t*
𐨧	𑀞	ठ	ṭh	*th*
𐨨 𐨩	𑀟	ड	ḍ	*d*
𐨪	𑀠	ढ	ḍh	*dh*
𐨫	𑀡	ण	ṇ	*n*
IV. DENTALS.				
𐨬	𑀢	त	t	t
𐨭 𐨮 𐨯	𑀣	थ	th	th
𐨰 𐨱	𑀤	द	d	d
𐨲 𐨳	𑀥	ध	dh	dh
𐨴	𑀦	न	n	n
V. LABIALS.				
𐨵	𑀧	प	p	p
𐨶 𐨷	𑀨	फ	ph	ph
𐨸	𑀩	ब	b	b
𐨹	𑀪	भ	bh	bh
𐨺	𑀫	म	m	m
VI. SEMI-VOWELS.				
𐨻 𐨼	𑀬	य	y	y
𐨽 𐨾	𑀭	र	r	r
𐨿	𑀮	ल	l	l
𐩀	𑀯	व	v	v
VII. SIBILANTS.				
𐩁	𑀰	श	ṣ	*s*
𐩂	𑀱	ष	sh	sh
𐩃 𐩄 𐩅 𐩆	𑀲	स	s	s
𐩇 𐩈	𑀳	ह	h	h
VIII. VOWELS.				
𐩉	𑀅	अ	a	a
𐩊	𑀆	आ	â	â
𐩋	𑀇	इ	i	i
𐩌 𐩍	𑀉	उ	u	u
𐩎	𑀏	ए	e	e
𐩏	𑀑	ओ	o	o
𐩐 𐩑			an	an

Asoka belonged, the names Magadhi and Maurya[1] are sometimes used to designate this alphabet. It often goes by the name of the South Asoka, in contradistinction to the Indo-Bactrian or North Asoka. M. Senart calls it simply the Indian Alphabet: General Cunningham has invented the name Indo-Pali, which has been very commonly adopted. As, however, it was undoubtedly the alphabet used at Asoka's court and throughout the greater portion of his dominions, there can be no great objection to retaining the familiar name of the ASOKA for the alphabet in which, with one single exception, all the numerous inscriptions of the greatest of Indian monarchs are conserved.

For the purpose of comparison, the two ancient alphabets of India, the Indo-Bactrian and the Asoka,[2] are here given side by side, in the order in which the

[1] I am inclined to think that 'Maurya' would be the best of all possible names for this alphabet, but I have refrained from adopting it because it is unfamiliar.

[2] The Table exhibits the two usual systems of Indian transliteration. The adaptation of the system of Sir W. Jones adopted for the *Numismata Orientalia* is better known than any other, and has therefore been employed for the Indian alphabets in the present work. The systems of Dr. Burnell and Professor Monier Williams, partly based on the 'Standard Alphabet' of Lepsius, possess obvious advantages, and might be preferred if the Jonesian system had not been in possession of the ground. Professor Max Müller's 'Missionary Alphabet,' used for the *Sacred Books of the East*, though theoretically excellent, is practically inconvenient, since the italics by which the palatals and cerebrals are distinguished are constantly required for other purposes. The same objection applies, though in a less degree, to the Glossic and Palæotype of Mr. Ellis.

letters are now arranged.[1] The classification is highly artificial, and bears evident tokens of having been the work of scientific grammarians. According to the organs of speech by which they are pronounced, the consonants are placed in seven groups (*varga*)—gutturals, palatals, cerebrals,[2] dentals, labials, semivowels, and sibilants. In each class the tenuis is placed first, followed by its aspirated form. Then comes the corresponding soft consonant, also followed by its aspirate, with the nasal last.[3] Initial vowels are represented by

[1] This arrangement must be very old, as the ancient Tibetan version of the *Lalita Vistara*, recording the legend that the youthful Buddha was taught the Indian alphabet, arranges the letters in the present order. The date at which this chronicle was composed is unknown, but it must have acquired considerable repute before 76 A.D., when it was translated into Chinese. See Max Müller's *Ancient Sanskrit Literature*, p. 517, seq.

[2] The cerebrals are more correctly called linguals. They are pronounced by keeping the tongue as far back as possible. The palatals are modified or softened gutturals. The cerebrals are usually distinguished from the corresponding dentals by a subscript dot, *ṭ, ṭh, ḍ, ḍh, ṇ*, or in the 'Missionary Alphabet' by italics. Lepsius uses *c̆, c̆h, ǰ, ǰh, ń*, for the palatals, and *s̆, ș̆, ș*, for the sibilants; Prof. Williams *ć, ćh, j, jh, ñ*, and *ś, sh, ș*; Dr. Burnell *c̆, c̆h, j, jh, ñ*, and *ç, sh, ș*; Holle has *tj, tjh, dj, djh, nj*, and *ç, sh, sj*.

[3] Nasal sounds are modified according to the organ employed in uttering the contiguous consonant. In the words *ink, inch, under, plinth*, we employ the same symbol, *n*, to express four distinct nasals, whereas Indian languages have separate symbols for the guttural, palatal, cerebral and dental sounds. The guttural nasal ङ, which has the sound of *ng* in *sing*, is usually transliterated by *ṅ*, but also by *n·* and *ng*. The palatal nasal ञ has the sound of *gn* in the French *campagne;* the usual transliteration is *ñ*, but *ń, ng, nj, gn* are used.

independent characters. Medial vowels, other than *ă*, are denoted by strokes, variously disposed, which are normally attached to the preceding consonant. When no vowel is expressed the fundamental vowel *ă* is taken as inherent, a manifest survival pointing to a primitive consonantal or syllabic script.

As to the origin and relations of the two alphabets, they present points, both of agreement and of difference, which are significant and instructive in the highest degree. A careful comparison yields the following results.

1. The Indo-Bactrian and the Asoka must have been developed out of two earlier alphabets, both of which possessed an insufficient number of characters for the necessities of Indian speech.[1]

The cerebral nasal ण is usually transliterated by *ṇ*, but Max Müller uses *n*, and Sir W. Jones *ń*. The dental nasal न is represented in all systems by n. The ordinary English *n*, however, is probably nearer to the Indian cerebral than to the dental.

[1] The Asoka alphabet has been plainly enlarged by differentiation. Thus 𑀘 *ch* and 𑀙 *chh*, 𑀞 *ṭh* and 𑀠 *th*, 𑀡 *ḍ* and 𑀢 *ḍh*, 𑀤 *d* and 𑀥 *dh*, 𑀮 *t* and 𑀢 *t*, 𑀩 *p* and 𑀧 *ph*, 𑀬 *y* and 𑀯 *v*, 𑀪 *b* and 𑀪 *bh*, seem to be related forms, and it is difficult to believe that 𑀮 *n*, 𑀦 *ṇ* and 𑀦 *n̤* can be of independent origin. So also with the eight vowels. From the three primitive types 𑀅 *a*, 𑀏 *e* and 𑀉 *u*, all the rest may be easily deduced. Numerous Indo-Bactrian letters were similarly obtained by differentiation. Thus the forms of the letters 𑀤 *d*, 𑀢 *t*, 𑀢 *ḍh*, 𑀣 *th*, 𑀞 *ṭh*, 𑀞 *ṭ*, are so much alike that they cannot all be of independent origin. The same is the case with 𑀳 *p* and 𑀥 *ph*, 𑀰 *ñ* and 𑀡 *ṇ*, 𑀬 *j* and 𑀛 *jh*, 𑀲 *s* and 𑀶 *sh*, as well as 𑀇 *a*, 𑀍 *e*, 𑀶 *i*, 𑀑 *o*, 𑀊 *u*. The aspirates *th*, *jh*, *sh*, *ph*, *ḍh*, differ from the letters *t*, *j*, *ṣ*, *p*, *ḍ*, by the addition of a bar; others, as *gh*, *dh*, and *bh*, are apparently ligatures obtained by adding a subscript *h* to the unaspirated letters. See p. 260, note.

2. The two primitive alphabets were in many respects independent and dissimilar. The Indo-Bactrian is slanting, cursive, and irregular, singularly free from looped forms, and written from right to left. The Asoka is written in the opposite direction; it is regular, upright, and rigid, with numerous looped forms. Not only do the two alphabets differ in general aspect, but there is hardly any appreciable resemblance in the forms of the corresponding letters.[1]

3. Though the two primitive alphabets were morphologically different, yet structurally they were identical. It may be affirmed that they differ in points in which Semitic alphabets of separate families differ from each other, while they agree in those characteristics as to which all Semitic alphabets are alike.[2]

[1] It is true that in both alphabets there are characters of nearly identical shape, and this could hardly be otherwise, the possible number of simple symbols being extremely limited, but it is important to note that when the symbols chance to be similar they express different sounds. Thus + denotes *k* in one alphabet and *ṭh* in the other, ٦ is *kh* in the Asoka and *a* in Bactrian, ٦ is *ñ* in Asoka and *k* in Bactrian. Thus such similarity as exists between the forms of the letters, tells strongly against the identity of the primitive sources.

[2] Both alphabets have upwards of forty symbols, about half of which are plainly of secondary origin, obtained by differentiation, in order to express peculiar Indian sounds. Excluding these secondary letters, it appears that both primitive alphabets must have had similar deficiencies, namely, in the nasals, the aspirated consonants, the cerebral and dental series, and the initial vowels. In both alphabets the notation for medial vowels is plainly a supplementary device of late introduction.

4. There are evident signs that the Indian redactions of the two earlier alphabets were to some extent systematic, and not altogether independent.[1]

5. The priority of the Asoka is implied by the fact that characters were apparently borrowed from the Asoka by the Indo-Bactrian, while the Asoka exhibits no certain signs of Indo-Bactrian influence.[2]

The conclusion seems to be that two distinct and ancient types of the primitive Semitic alphabet were independently introduced at distant points of Indian

[1] This is shown by the similarity of the methods employed for vocalic denotation, and for obtaining the additional consonants required. Thus in both alphabets *ṇ* was obtained from *n*, *ph* from *p*, and *bh* from *b*. It is hardly possible that the vowel systems can have been independent. In both alphabets the fundamental vowel *ĭ*, which in Indian languages constitutes thirty-five per cent. of all the vowels, is not expressed at all, except at the beginning of words, being regarded as inherent in the preceding consonant. In both alphabets the other medial vowels are expressed by a short stroke (–) attached to the covering consonant, and varying in position according to the nature of the vowel to be denoted. In both alphabets the initial vowels are expressed by independent characters. Hence it may be concluded that final redactions of both alphabets were effected by scientific grammarians, aiming at similar objects and working by similar methods.

[2] The Indo-Bactrian letters 𐨕 *ch*, and 𐨖 *chh* seem to have been respectively obtained from the Asoka 𐨐 *kh* and 𐨑 *k*, with 𐨿 *h* superimposed. The Asoka alphabet contains no forms which can be assigned to the Indo-Bactrian, but several, such as 𐨠 *th*, 𐨡 *ṭh*, and 𐨣 *dh*, which may possibly have been derived from the Greek. As to the vowel notation, the Indo-Bactrian is more primitive and imperfect, the Asoka more elaborate and complete. The Indo-Bactrian looks like a make-shift adaptation of the Asoka method.

territory, that both underwent a gradual evolution, and that finally a systematic redaction and arrangement was effected by scientific grammarians who were acquainted with both alphabets.

§ 4. THE ORIGIN OF THE INDIAN ALPHABETS.

During the last half century the origin of the Asoka alphabet has been the subject of a keen and protracted controversy. The problem is still as far as ever from a solution, as appears from the fact that the two most recent writers on the question, Dr. Burnell and Professor Dowson, specialists whose names carry the greatest weight, have espoused views diametrically opposite.

Three theories have been propounded. Prinsep, followed by Otfried Müller, was inclined to attribute the peculiarities of the Asoka alphabet to Greek influences, an opinion still upheld by M. Senart and M. Joseph Halévy. Dr. Wilson's guess was that "Asoka's Buddhists derived their letters from Greek or Phœnician models." A Semitic origin had, however, been already suggested by Sir William Jones in 1806, and supported by Kopp in 1821.[1] In 1834 Lepsius published his adhesion to this opinion, which was afterwards espoused by Weber, who was the first

[1] Kopp, *Bilder und Schriften*, vol. ii. pp. 348, 374. The acuteness of Kopp appears from the fact that out of the five affiliations of Indian letters which he suggested, only two appear to be erroneous.

to bring forward in its favour arguments of real cogency.[1] Benfey, Pott, Westergaard, Bühler, Max Müller, Friedrich Müller, Sayce, Whitney, and Lenormant have given a more or less hesitating adhesion to the Semitic hypothesis, but without adding any arguments of importance to those adduced by Weber. The most recent advocates on this side are Dr. Deecke, who has marred what might have proved a valuable contribution to the controversy by the introduction of the untenable theory of an ultimate derivation from the Assyrian cuneiform, through the south Semitic alphabet,[2] and Dr. Burnell,[3] who prefers to resort to a hypothetical Aramean alphabet, which may, he thinks, have been "used in Persia, or rather in Babylonia."

A third theory, that of an indigenous origin, is upheld by specialists of nearly equal authority. This solution was first suggested by Lassen. He was followed by Mr. Edward Thomas, who decisively rejects every Semitic source, attributing the invention to the Dravidian races of Southern India. General Cunningham[4] has propounded an elaborate scheme as to the mode in which, as he considers, the Asoka

[1] In the *Z. D. M. G.*, vol. x. (1856), an essay reprinted in the *Indische Skizzen*, pp. 127—150.

[2] Deecke, in *Z. D. M. G.*, vol. xxxi.

[3] Burnell, *Elements of South Indian Palæography*, Second Edition, 1878.

[4] Cunningham, *Corpus Inscriptionum Indicarum*, vol. i.

alphabet may have originated out of a primitive Indian picture-writing. The final contribution to the argument is from the pen of Prof. Dowson,[1] whose opinions are entitled to great consideration. His conclusion is that "the peculiarities of the Indian alphabet demonstrate its independence of all foreign origin," and that "it may be confidently urged that all probabilities and inferences are in favour of an independent invention."

Such are the views of the most distinguished specialists who have devoted their attention to the subject. In face of such radical diversity of opinion it may be deemed a bold attempt to pronounce any confident judgment on a matter of such difficulty. There are, however, certain considerations to which due weight does not seem to have been attached, which it seems desirable to submit to the consideration of the reader.

A Greek source may be dismissed without serious examination, as it is beset by difficulties, both chronological and phonological, of a most formidable nature.

As to the more weighty hypothesis of a native origin, it is necessary to bear in mind the actual conditions of the problem, and the extreme slowness of the only process by which, as far as we know, an independent alphabet could have been evolved.

The arbitrary 'invention' of an alphabet may be set aside as contrary to all experience and analogy. The

[1] Dowson, *The Invention of the Indian Alphabet*, in *J. R. A. S.*, N. S., vol. xiii., p. 119. 1881.

history of the various primitive graphic systems, such as the Chinese, the Cuneiform, or the Egyptian, shows that the art of writing has invariably begun with hieroglyphic ideograms, slowly developed into phonograms, and passing gradually through syllabism towards alphabetism, the successive stages of the process occupying in every instance vast periods of time. If then the Indian script arose, as in all other cases, out of a primitive picture-writing, the operation must have been in progress for very many centuries. We should expect therefore to discover survivals of the primitive pictures among the characters used in Asoka's time, as well as actual examples of the earlier hieroglyphs, such as those which have been so abundantly found in Mexico, China, Egypt, Carchemish, and Babylonia.[1] No vestiges of any such primitive

[1] The only attempt to show how the Indian alphabet could have originated out of a primitive picture-writing is that which has been made by General Cunningham. His scheme is, however, wholly conjectural, being unsupported by any known facts. The earlier forms of the Indian letters are actually more alphabetic and less pictorial in appearance than those which subsequently grew out of them. General Cunningham's method, moreover, is so loose and vague, that if it proves anything it proves too much. Thus he contends that the Asoka character ꝺ *v*, is an acrologic picture which may have been intended either for a 'lute,' *vina*, or an 'arm,' *va*, or a 'bamboo,' *vena*, or a 'drop of water,' *vindee*, or an 'arrow,' *van*. So again the letter ʌ *t*, he thinks, may have been derived from one or other of the words *tan*, 'to spread,' *talah*, 'hand,' *tala*, 'fan-palm,' *tara*, 'a star,' *tarang*, 'a wave,' or *tri*, 'three.' Such an elastic method may establish anything, or—nothing.

devices have come to light in any part of India.[1] On the contrary, the Indian alphabet, when first we meet with it, exhibits no signs of adolescence or imperfection, but is already among the most beautiful and finished of known alphabets. Moreover, we gather from Nearchus and Megasthenes that though the art of writing was not unknown in India in the 4th century B.C., yet the knowledge of it was not generally diffused, being confined to a small class of learned men. Again, the absolute uniformity of the Asoka characters, from the most distant provinces of India, is difficult to explain except on the hypothesis of a comparatively recent importation of a foreign alphabet. If it had been invented in India, then during the prolonged period needed for its evolution a number of variant types would almost infallibly have arisen in a region nearly as large as Europe. The examples of Greece and Italy show that in small independent states, such as prevailed in India prior to the Mauryan empire, alphabetic diversities originate in a time comparatively brief, while in India itself the inscriptions of the three or four centuries subsequent to Asoka's reign do not fail to exhibit the growth of numerous local types. The prolonged period of alphabetic evolution de-

[1] No conclusions can be drawn from the Harapa seal, said to have been found in the Punjab. Nothing is known about its date, and there is no reason to suppose that it is even of Indian workmanship. The six unknown symbols which it bears are believed by M. de la Couperie to be ancient forms of Chinese characters. See Cunningham, *Corpus*, vol. i., p. 61.

manded by the theory is, therefore, a very formidable objection.

The peculiar structure of the Asoka alphabet is also difficult to reconcile with an Indian origin. It was evidently evolved, as we have already seen (p. 301), out of a parent script possessing a smaller number of graphic signs, which were augmented by means of differentiation, so as to express the numerous sounds of Indian speech. Now we have had frequent occasion to notice how the repeated transmissions of the Semitic alphabet have, almost invariably, involved a similar evolution of additional characters, whereas the analogies supplied by graphic systems of independent origin, such as the Egyptian, the Cuneiform, the Chinese, the Japanese, and the Cypriote, suffice to indicate that an alphabet evolved by means of a syllabary out of a primitive picture writing would, almost inevitably, possess a much larger number of characters than would be required for the purposes of alphabetic writing.

Any hypothesis as to the indigenous origin of the Indian alphabet being beset by grave difficulties, and based wholly on mere conjecture, it cannot at the utmost be considered as more than a bare possibility; while, on the other hand, the analogy afforded by the repeated transmissions of the Semitic alphabet, by means of commercial intercourse, establishes a strong *prima facie* probability of a derivation from a Semitic source.

This general probability is increased by various

particular considerations. Of the two primitive alphabets of India, the Semitic origin of the Indo-Bactrian type has been universally admitted. It is also conceded on all hands that the Iranian prototype of this alphabet underwent extensive amplifications and modifications to fit it for the needs of Indian speech. Most of the arguments which have been held to establish the Semitic origin of the Indo-Bactrian alphabet apply also to the Asoka. In both cases, as we have seen (p. 302), some primitive alphabet, comprising about twenty characters, has been largely increased by differentiation. In both alphabets the additional characters, which bear marks of secondary origin, express precisely those sounds which are not represented in Semitic alphabets, namely, the nasals, the cerebrals, and the aspirated consonants.[1] The two Indian systems of vowel notation have been shown to be especially significant.[2] In any Indian alphabet of indigenous origin the vowels, we may be sure, would have been fully expressed. But the Semitic alphabet was arrested in the process of transition from the syllabic to the alphabetic stage—it is neither absolutely syllabic nor purely alphabetic, but essentially consonantal. The two primitive Indian scripts are manifestly based upon alphabets which had reached the Semitic stage of evolution, their partial notation of the medial vowels being non-alphabetic in its character, while the

[1] See p. 301, *supra*, note.

[2] See p. 303, *supra*, note.

emphatic initial vowels are more fully expressed, as in early Semitic inscriptions. (See vol. i., pp. 182, 280.). In the Asoka alphabet the vocalic system, as well as the characters representing non-Semitic sounds, are as clearly of secondary origin as they are in the Indo-Bactrian.

It is in the highest degree improbable that the structural parallelism which is exhibited by the Indo-Bactrian and the Asoka alphabets should be due to mere accident. The conditions under which the Semitic alphabet arose were unique. It is immensely more probable that an alphabet of the very peculiar Semitic style should have been borrowed than that it should have been reinvented from independent germs.

Hence it may be confidently affirmed that both of the primitive Indian scripts exhibit features which cannot easily be explained, except on the hypothesis of a development out of an earlier alphabet of the Semitic type.[1]

In fact, the only argument of any real weight which has been advanced by the opponents of the Semitic origin of the Asoka, is the difficulty of pointing out any particular Semitic alphabet to which the parentage

[1] The foregoing arguments against the indigenous origin of the Indian alphabet apply with nearly equal force to a derivation from any non-Semitic source, such as the Lolo or Chinese, as has been suggested by M. Terrien de la Couperie.

can be reasonably ascribed.[1] If this can be done the prolonged controversy must infallibly collapse.

There are three possible Semitic sources from which the Asoka alphabet might have been obtained. India, prior to the third century B.C., had been in commercial or political connection with Phœnicia, Babylonia, and Arabia: from any one of these regions the art of alphabetic writing might have been transmitted.

1. Benfey's conjecture that it came direct from the Phœnicians is open to fatal objections. The trade of the Phœnicians with India, which commenced in the time of Solomon, ceased as early as the year 800 B.C. If the alphabet had been communicated at this early

[1] General Cunningham argues that "if the Indians did not borrow their alphabet from the Egyptians, it must have been the local invention of the people themselves, for the simple reason that there was no other people from whom they could have obtained it. Their nearest neighbours were the peoples of Ariana and Persia, of whom the former used a Semitic character, reading from right to left, and the latter a cuneiform character formed of separate detached strokes, which has nothing whatever in common with the compact forms of the Indian alphabet."—*Corpus Inscriptionum Indicarum*, p. 61. Mr. Thomas rejects a Semitic origin for the Asoka alphabet, (1) because of the different direction of the writing, (2) because of the insufficient resemblance of the forms of the letters, (3) because the Indo-Bactrian, which is of Semitic origin, is inferior to the Asoka for the expression of the sounds of Indian languages.—Prinsep's *Essays*, vol. ii., p. 43. Professor Dowson, in like manner, boldly challenges those who claim a foreign origin for the Indian alphabet "to show whence it came."—*J. R. A. S.*, N. S., vol. xiii., p. 112. It will presently be seen that none of these writers have taken into account the one probable and sufficient Semitic source to which the Indian alphabet may be assigned.

period a variety of Indian scripts would in all probability have sprung up during the long interval which elapsed before the time of Asoka, whereas, in the 3rd century B.C. a uniform alphabet prevailed over a vast Indian area. Moreover, as will presently be shown, there is reason for believing that the art of writing was not practised in northern India[1] before the 6th century B.C. A further difficulty, which seems conclusive, is the want of any appreciable resemblance between the Asoka characters and the early Phœnician types.

2. Dr. Burnell's hypothesis of a Babylonian or Persian origin for the Asoka alphabet is open to a similar objection. The ancient Iranian alphabet belonged to the Aramean type, in which the loops of the letters had been opened, whereas in the Asoka alphabet they are closed. Moreover, this Iranian alphabet had already reached India through Afghanistan, and is known to us as the Indo-Bactrian alphabet of the Kapur-di-giri inscription. The Indo-Bactrian of the Punjab, and the Asoka of the Ganges valley, are of

[1] The Tamil alphabet exhibits forms which Dr. Burnell has traced to the Vatteluttu, a very ancient Dravidian alphabet of obscure origin, which, however, appears from the system of vowel notation to be derived from a Semitic source, and may possibly have been obtained from the Phœnician traders. That the Phœnicians traded with Southern India may be gathered from the fact that the peacocks, *tuki*, brought by Hiram's ships to Solomon, are designated by a loan-word obtained from the Tamil, *togai*. See Burnell, *South Indian Palæography*, p. 4 and plate 17.

such very different types that it is impossible to admit, as the hypothesis demands, that they were both of Iranian origin, one coming overland to India through Bactria, and the other by sea, by the way of the Persian gulf.

3. There remains only one possible source, the ancient alphabet of Arabia Felix.[1] The transmission of the Semitic alphabet could only have been effected through some nation which was in commercial or political contact with India prior to the expedition of Alexander. Then, as now, India had intercourse with the Western world through two channels—by land and by sea. Her northern alphabet, the Indo-Bactrian of the Punjab, plainly came to her through the Khyber; her southern alphabet, that of the inscriptions on the western coast, as manifestly must have come by sea. Now, from the 10th to the 3rd century B.C. Yemen was the great central mart in which Indian products were exchanged for the merchandize of the West. Egypt would send cloth, papyrus, and glass; Syria, wine, oil, and brass; Phœnicia, weapons and purple stuffs; while, in exchange, the Indian coasting vessels brought ivory, gold, precious stones, and Indian wares.

[1] This solution was suggested by Weber, a quarter of a century ago, at a time when so little was known of South Semitic Epigraphy as to make an absolute demonstration impossible. Both Lenormant and Deecke may, however, claim the merit of having seen that Weber's hypothesis is open to fewer objections than any other that has been proposed.

For a prolonged period this lucrative traffic was in the hands of the Sabeans, and was the main source of their proverbial opulence. The trade between Egypt and Yemen began as early as 2300 B.C., and that between Yemen and India was established not later than 1000 B.C. Even in the time of the Ptolemies the Indian trade was not direct, but passed through the hands of the Sabeans, who possessed extensive commerce and large vessels. Their ports were frequented by trading vessels from all parts; from the Red Sea, the Persian Gulf, the coast of Africa, and especially from the mouth of the Indus. From the Periplus we learn that Aden was a great entrepôt of this commerce, while at the beginning of the 2nd century B.C. the island of Dioscorides, off the Somali coast, was the centre of exchange for Indian products.[1]

There was therefore ample opportunity for the transmission to India of the Sabean alphabet, which must have branched off from the Phœnician stem at some time not later than the 6th century B.C. It is to this very period that the origin of the Indian alphabet must be assigned. The question has been carefully discussed by such competent authorities as Professors Max Müller and Dowson.[2] They urge that though the Vedic poems were doubtless orally transmitted, yet

[1] See Bunbury, *History of Ancient Geography*, vol. i., p. 580, *seq.*, vol. ii. p. 582; Duncker, *History of Antiquity*, vol. ii., p. 297 to 323.

[2] Müller, *Ancient Sanskrit Literature*, pp. 502, *seq.*; Dowson, *Invention of the Indian Alphabet, J. R. A. S.*, N. S., vol. xiii., p. 103, *seq.*

certain Sutras, assigned to the 6th century B.C., imply a knowledge of the art of writing; which is also mentioned in the Institutes of the lawgiver Manu, and is referred to in the poem of the Maha-bharata, and in the Grammar of Panini, compositions which may be of the same date, and cannot be very considerably later.

Assuming that the Sabean alphabet was introduced into India as early as the 6th century B.C., sufficient time would be obtained for the development of the characteristic peculiarities of the Indian alphabet, while the period would not be so remote as necessarily to involve the development of numerous diverse scripts. This date agrees also with the indications afforded by the Indo-Bactrian alphabet, which, as we have seen (p. 261), was most probably introduced soon after the Persian conquest of the Punjab, at the beginning of the 5th century B.C. If the Asoka alphabet, better adapted as it was for the expression of Indian speech, had been at that time in possession of the north-western region, the Indo-Bactrian would assuredly have been unable to displace it; while, on the other hand, the Indo-Bactrian would infallibly have extended itself over the rest of India had it not been for the nearly simultaneous introduction of another alphabet in the south. In the 3rd century B.C., when epigraphic evidence first becomes available, the two alphabets, spreading from different and remote centres, had come into contact, actually overlapping each other

to some extent on the eastern frontier of the Punjab.[1] That the Asoka alphabet had at this time gained possession of the more extensive region may indicate a certain priority in date; and its earlier development is implied by the fact that the northern alphabet seems to have been affected by the alphabet of the south, while no trace of any reciprocal influence can be detected.[2]

Thus the geographical and chronological conditions present no difficulties in the way of the hypothesis of a derivation of the Indian alphabet from the Sabean. To this hypothesis the crucial test remains to be applied. General considerations are insufficient unless

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[1] The point of contact of the two alphabets is indicated by Buddhist coins from Behat, which have biliteral legends, in the Asoka alphabet on one side and in the Indo-Bactrian on the other. The kingdom in which they were current appears to have extended from the Doab of the Jumna and Ganges, westwards to the Punjab. In this region the two alphabets must have overlapped. The moneyers were evidently not very familiar with the Indo-Bactrian letters, as mistakes are occasionally made. Mr. Thomas attributes these coins to a very early date, prior to the occupation of India by the Bactrian Greeks, as is indicated by the character of the art. Thomas, *Ancient Indian Weights*, p. 47; Prinsep's *Essays*, vol. i., p. 208.

[2] That the Asoka alphabet was well established on the lower Ganges in the 4th century B.C. is indicated by the account given by Megasthenes of the treatises written by the Buddhist monks (gymnosophists). The matrimonial alliance between Seleucus and Chandragupta and the prolonged residence of a Greek ambassador at the court of Pataliputra, would probably have led to the introduction of the Greek alphabet, if a native alphabet had not already been in possession.

it can be shown that the two alphabets exhibit such structural resemblances, and such agreement in the forms of the individual letters, as to bring the suggested origin within the bounds of reasonable probability.

A very superficial examination will suffice to show that the Asoka alphabet, though it offers hardly any appreciable resemblance to any of the North Semitic alphabets, agrees in a very remarkable way with the general type of the alphabets of the South Semitic family.

The common characteristics of the Indian and South Semitic alphabets are their monumental style, the direction of the writing, the vocalization, and the retention of the primitive looped and zigzag forms.

The general aspect of the Sabean inscriptions agrees so remarkably with those of Asoka that the resemblance cannot fail to strike the most careless observer. In both alphabets the letters are symmetrically constructed out of combinations of straight lines and arcs of circles. Hence the writing is rigid, regular, and monumental, all slanting and cursive forms being absolutely excluded. The Sabean inscriptions are written from left to right as well as from right to left, while in India the more convenient option has been preferred. No importance, however, can be attached to the remarkable agreement between the Ethiopic and Indian systems of vocalic notation, since the Ethiopic alphabet is later in date than the other.

Finding, as we do, that the Asoka alphabet belongs,

so far as its general characteristics are concerned, to the South Semitic group, it only remains to examine the forms of the individual letters in order to see if probable prototypes can be found for those characters which appear to have constituted the primitive alphabet of India. These we may reckon at twenty-two, the rest, to all appearance, having been developed on Indian soil in order to express peculiar Indian sounds.[1]

From the following Table the reader will be able to judge whether the Sabean letters offer an approximation to the Indian forms sufficiently close to make

[1] The developed alphabet of ancient India contained forty-two characters, of which thirty-three are consonants and nine are vowels. Prinsep thought that the consonants might be reduced to ten primitives, *k*, *ch*, *ṭ*, *ḍ*, *n*, *p*, *m*, *r*, *v*, *s*. Without going so far as this, it may be admitted that the four Indian nasals *ṅ*, *ñ*, *ṇ*, *n*, are manifestly differentiations of a single primitive letter, corresponding to the Semitic nasal נ. In like manner the eight Indian cerebrals and dentals *t*, *ṭ*, *th*, *ṭh*, *d*, *ḍ*, *dh*, *ḍh*, resolve themselves into three primitive types corresponding to the three Semitic dentals ד, ט, ת. So the nine Indian vowels *a*, *â*, *e*, *ai*, *i*, *u*, *û*, *o*, *au*, are derived from only three types, answering to א, י, ו. The aspirated consonants *bh*, *ph*, *ch*, *sh*, are also evidently of secondary origin. To repeat one or two former instances, it is impossible to deny that such symbols as ʘ *th*, and ʘ *ṭh*; or ⊥ *n*, and ⊥ *ṇ*; or ⊔ *p*, and ⊔ *ph*; or ⊄ *ch*, and ⊄ *chh*, some of which express distinctions of sound so delicate as hardly to be perceptible to an untrained ear, and whose forms are so similar, are simply variants of primitive letters, and not independent characters (see note on p. 301). Deducting from the forty-two letters those which are obviously of secondary origin, twenty-two primitive characters are left to be identified with the twenty-two letters of the Semitic alphabet.

AFFILIATION OF THE ASOKA ALPHABET.

JOKTANITE.				INDIAN.		
Names.	Values.	Safa.	Saba.	Primitives.	Derivatives.	
Alf	*'a*			*a*	*ā*	1
Bet	*b*			*b*	*bh*	2
Gēmel	*g*			*g*		3
Dent	*d*			*d*	*ḍ* *ḍh*	4
Hoi	*h*			*h*		5
Wawe	*w*			*u*	*ū* *o*	6
Zai	*z*			*jh* (*dzh*)		7
Kharm	*kh*			*gh*		8
Ṭait	*ṭ*			*th*	*ṭh* *dh*	9
Yaman	*y*			*v*	*y*	10
Kaf	*k*			*kh*		11
Lawe	*l*			*r*		12
Mai	*m*			*m*		13
Naḥas	*n*			*n*	*ṇ* *ṅ* *ñ*	14
Sat	*s*			*s*		15
'Ain	*'a*			*e*	*ai* *i*	16
Ef	*f*			*p*	*ph*	17
Tsadai	*ts*			*ṣ*	*ṣ*	18
Qaf	*q*			*chh*	*ch* *k*	19
Rees	*r*			*l*		20
Saut	*sh*			*j*	*sh*	21
Tawe	*t*			*t*	*ṭ*	22
		I.	II.	III.	IV.	

it probable that the vexed question of the origin of the Asoka alphabet has at last been set at rest.[1]

In comparing the Indian and Sabean forms it must be borne in mind that no south Semitic inscriptions have as yet been discovered of a date sufficiently remote to supply the absolute prototypes of the Asoka letters. Of the inscriptions which accident has preserved, none probably are older than the middle of the 2nd century B.C., a period later by about a century than the earliest Indian inscriptions, and later by several centuries than the type from which the Asoka alphabet was actually derived. It must therefore be remembered that it is only possible to compare sister alphabets derived from a common but unknown source.[2]

This obvious consideration meets the objection urged by Prof. Max Müller against a Sabean source, that there are no inscriptions from Arabia of a date so early as to be the prototypes of the Indian letters. The actual ancestral type of the Asoka alphabet is

[1] In this Table a typical selection has been made from the South Semitic letters given in vol. i., p. 338. Transitional forms, approximating either to the earlier north Semitic, or to the later Ethiopic types, have been excluded, as well as characters facing in the direction opposite to that which was adopted in India. In three cases, however, *hoi*, *ef*, and *tsadai*, the later Ethiopic forms have been added, not as prototypes, but as illustrative cases of parallel morphologic development.

[2] In several cases, such as *alf*, *wawe*, *kharm*, *yaman*, *kaf*, *lawe*, *sat*, *'ain*, *qof*, the Indian forms are most easily explained by means of the transitional alphabet of Safa.

unknown,[1] but there is no reason why it should not be ultimately discovered in the unexplored regions of Oman or Hadramaut, or among the ruins of Ormus, Bahrein, Gerrha, or some other centre of primitive commerce on the shores of the Persian Gulf.

The Table as a rule speaks for itself, but there are two or three points which may require a word of explanation.

In the first place, the signs for *r* and *l* appear to have been interchanged. The Asoka *l* agrees with the Sabean *r* in having the lower hook turned to the left, while the Asoka *r*, like the Joktanite *l*, is either straight or has a hook to the right. The interchange of the two forms presents no difficulty, as there are many Prakrit words in which the use of *r* and *l* is indifferent. In copies of Asoka's Edicts, obtained from different provinces, the letters are interchanged, *raja* in one version being represented by *laja* in another.[2]

On a bilingual coin of Agathokles, a Greek king of Bactria who was a contemporary of Asoka, the Indian ε, *j*, represents a Greek *sigma*. Hence there is no

[1] On a Babylonian cuneiform tablet belonging to the 5th century B.C., Professor Sayce has recently discovered a docket in an alphabet which, as Dr. Burnell considers, may prove to be the prototype of the Indian script.

[2] See Prinsep's *Essays*, vol. ii., p. 35. In numerous languages, such as old Egyptian and several Polynesian dialects, we find this confusion. It has already been shown (vol. i., p. 38) that the Japanese *r* was obtained from a Chinese *l*.

phonetic difficulty in referring this letter, and its derivative 𐡮 *sh*, to the Sabean *shaut*, 𐩦 *sh*.

Some of the identifications proposed in the Table are only tentative, but there are hardly more than half a dozen of the forty-two Indian letters whose affiliation presents any very serious difficulty.[1] But if all these doubtful cases, which must await the discovery of more primitive forms of the Sabean alphabet, be put aside, the evidence which can be brought forward seems still to be sufficient to establish the origin of the Indian alphabet.

Of the forty-two Indian letters, the parentage of about four-fifths can be assigned with reasonable certainty, while there is no character to which a plausible south Semitic parentage cannot be attributed. I confess that it seems to me that the resemblances between the forms of the Arabian and Indian letters, as set forth in the Table, are as conclusive as those which have won universal assent to the derivation of the Indo-Bactrian letters from the Iranian, or of the Pehlevi from the Aramean.

[1] The source of the Indian *k* is somewhat obscure, but it seems probable that both *k* and *chh* were obtained from the two variant forms of *qaf* in the Safa alphabet. It may also be open to question whether *g* and *kh* are independent, or only differentiated forms; whether *ṭ* was differentiated from *t* or from *dh*; and whether *y* comes ultimately from *wawe* or *yaman*. The affiliation of *p* is also difficult. In the Ethiopic alphabet *pa* 𐌐 is believed to have been borrowed from the Greek, while *pait* 𐌦 is a differentiated form of *bet* 𐌁. The Asoka 𑀧 *p* was probably derived from the prototype of the Ethiopic 𐌦, *f*, which may be a descendant of either *pe* or *vau*.

§ 5. THE EPOCH OF TRANSITION.

The formation of the various vernacular scripts of India out of the primitive alphabet has now to be traced with the aid of such materials as are available.

The process of evolution occupied about twelve centuries. It begins with the Edicts of Asoka in 250 B. C., and ends in the 10th century, A.D. In three cardinal inscriptions of this epoch, namely, the Kutila or Bareli inscription of 992, the Chalukya or Kistna inscription of 945, and a Kawi inscription of 919, the characteristic features of the three great alphabetic types of India, the Nagari, the Dravidian, and the Pali, can unmistakeably be recognized.

Of epigraphic material there is no lack. The indefatigable zeal of Indian antiquaries, among whom the names of Burnell, Burgess, Fleet, Rice, Thomas, Elliott, Cohen-Stuart, Dowson, and Cunningham merit conspicuous mention, has made available numerous coins, copper-plate grants, and inscriptions from topes and temples, belonging to various Indian dynasties. The work of arranging this vast mass of material has not, however, progressed with equal rapidity, though order is gradually emerging out of chaos. Only a few years ago any systematic account of Indian Epigraphy during the transitional period would have been impossible, and even now any arrangement that may be attempted must be considered to some extent as merely provisional.

One great difficulty in dealing with the epigraphic material arises from the uncertainty of early Indian chronology. Numerous dated inscriptions have been discovered, but much doubt attaches to the determination of the various eras to which the dates refer.[1] Hence many important records can only be classified according to the dynasties to which they are assigned, with the expectation that the chronology of these dynasties may hereafter be determined with greater precision than is now possible.

The chief early Indian dynasties[2] are as follows:—

1. The Maurya kings of the empire founded by Chandragupta, and extended by Asoka.
2. The Turushka dynasty of Indo-Scythic kings who ruled in the Punjab.
3. The Sah kings who reigned on the Western Coast.
4. The Gupta dynasty of Magadha.
5. The Valabhi kings of Kathiawar.
6. The Cera and Vengi kings who ruled in the valleys of the Kistna and the Godavari.
7. The Chalukya dynasty of the Deccan.

The vast empire of Asoka did not long remain

[1] See note on p. 328, *infra*.

[2] The obscure Andhra dynasty, known by inscriptions at Nanaghat and elsewhere, has not been taken into account by reason of its uncertain date. Mr. Burgess assigns the beginning of the dynasty to 22 B.C., whereas Dr. Bühler thinks that the Maurya and Andhra inscriptions represent sister alphabets, derived from a common source, the Andhra being the older of the two, and dating from about 300 B.C. For my own part, I confess I do not see the force of Dr. Bühler's arguments. See *J. R. A. S.*, N. S., vol. xiv., p. 340, and *Arch. Survey, Kathiawad*, p. 131.

intact. In the 1st century B.C. the great Scythian inroad expelled the Macedonians from Bactria, driving them first into Afghanistan, then into the Punjab, and onwards as far as Gujarat. About half a century before the Christian era, Kanishka, king of the Tochari Scythians, who had embraced the Buddhist doctrine, established the Turushka empire, which extended over Afghanistan and the Punjab. The Indo-Scythic dynasty lasted between three and four centuries. The coins and inscriptions of their kings are mostly in the Indo-Bactrian alphabet, but in the ruins of the Buddhist temples at Mathura, on the eastern border of their realm, some of their inscriptions have been found written in a slightly developed form of the Asoka alphabet. The alphabet of the Mathura inscriptions is connected with that of Asoka by numerous records in Buddhist cave-temples. Of these caves, some of the earliest, those in Behar and Cuttack, were constructed by Asoka himself, and contain his inscriptions of dedication. There are numerous inscriptions of somewhat later date in caves at Khandagiri, Ajanta, Nasik, Junir, and elsewhere. The typical alphabet of the inscriptions at Mathura and in the Buddhist caves will be found in line 2 of the Table on p. 336. The approximate date is the 1st century of our era.

While the Indo-Scythians were ruling in the Punjab the contemporaneous dynasty of the Sah kings, who called themselves Kshatrapas or Satraps, was established on the western coast. Some of their coins have Greek

legends. Several brief records of dedication in the caves at Nasik and Junir are attributed to them. The most important monument which they have left is an inscription of Rudra Dama, the seventh king of the dynasty, engraved alongside of the edicts of Asoka, on the western face of the historic rock of Girnar. It commemorates the reconstruction of an embankment or dam, and records the fact that the dam had previously been repaired by the "Maurya raja Chandragupta," who is known to us as the contemporary of Alexander. Mention is also made of Piyadasi, who here goes by the name of "Asoka Maurya," by which he is designated in the chronicles. The alphabet of this inscription, which may be assigned to the 2nd century A.D., is given in line 3 of the Table on p. 336.[1]

The alphabet exhibited in the inscriptions of the shadowy dynasty of the Sah kings is succeeded by that of the great Gupta dynasty which reigned in Magadha over the central portion of the dominions of Asoka. That they followed the Sah kings in Gujarat, is shown by a third inscription on the Girnar rock,[2] in

[1] This alphabet, which is the Sah alphabet of Mr. Thomas, and the Kshatrapa of Mr. Burgess, is the Junogarh of Prinsep. It is unaccountably called the 'Aŝoka' by Faulmann, *Buch der Schrift*, p. 126, and the 'Tsandra Gupta' alphabet in his *Geschichte der Schrift*, p. 460.

[2] The rock on which these memorable records are engraved is about a mile east of Junogarh, and four miles from the base of the hill of Girnar. It probably marked the extreme precinct of the sacred mountain. The rock contains three successive inscriptions, the Asoka

which Skanda-Gupta, the seventh Gupta king, records another reparation of the dam. Hence the Girnar rock testifies to the evolution of the Indian alphabet during four or five centuries.

It is not only at Girnar that the records of the Maurya and Gupta dynasties appear side by side. Immediately below the well known copy of the six shorter edicts of Asoka, on the Allahabad lat, is the most interesting of all the records of the great Gupta dynasty.[1] This celebrated monument is a shaft of

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edicts on the east, the Sah inscription on the west, and the Skanda-Gupta inscription on the south. It need hardly be said that there is no connection between the Gupta dynasty, to which Skanda-Gupta belonged, and the Maurya king Chandragupta, the contemporary of Seleucus. They are separated by an interval of several centuries.

[1] The alphabet of this inscription is given in line 4 of the Table on p. 336. It is usually assigned to the 5th century, but according to the views of Mr. Thomas (*Numismata Orientalia*, vol. i., p. 45, and *J. R. A. S.*, N. S., vol. xiii., p. 549) it was the extinction and not the rise of the Gupta dynasty which took place in 319 A.D. The names of eight Gupta kings are known to us, of whom Samudra-Gupta is believed to have been the fourth. Hence the date would be the middle of the 3rd century A.D., or even earlier. Cf. Prinsep, *Essays*, vol. i., pp. 233 to 235; Cunningham, *Corpus*, vol. i., p. 37. Prof. Oldenburg has recently put forward in the *Zeitschrift für Numismatik* a reconstruction of Indian chronology, making the Kshatrapa era commence about 100 A.D., the Gupta era in 319 A.D., the Valabhi in 480, and identifying the Saka era with that of the Indo-Scythian king Kanishka, which he dates from 78 A.D. See *Indian Antiquary*, August, 1881. Mr. Burgess, adhering to the chronology usually accepted, assigns the Rudra Dama inscription to 150 A.D., and the Skanda-Gupta inscription to 450—470 A.D. According to Mr. Thomas the date of Rudra Dama is

polished sandstone, 35 feet in height, its capital bearing traces of the influence of Greek art. The edicts of Asoka are engraved in continuous lines running horizontally round the column. Portions of the third and fourth edicts have been cut away to make room for an inscription of the Moghul emperor Jehangir, dated in 1605 A.D. Immediately below the Asoka edicts comes a long inscription commemorating the deeds of Samudra-Gupta, the fourth of the Gupta kings. We are told that "this lofty pillar is, as it were, the arm of Samudra-Gupta, who when alive filled the earth with the fame of his conquests, and is now departed to enjoy the bliss of Indra's heaven." The inscription goes on to say "how his wife, having seen his former good acts, delightful as nectar, was much pleased; how his Majesty exults in the princes, endued with hundreds of virtues and good qualities, prostrate at his feet: a man inspiring fear as of instant annihilation: altogether incomprehensible, yet tender minded to those who are submissive and bow before him: how he with the mighty chest, who is able to engage in a hundred battles, received as tribute from the king of kings (King of Persia), from the Scythians and the Huns, maidens, jewels, money, horses, and ornaments: how his person became beautiful from the marks of wounds

about 40 A.D., of Samudra-Gupta 160 A.D., and of Skanda-Gupta 209 A.D. See Prinsep's *Essays*, vol. ii., pp. 55, 68, plate 38; Burgess, *Archæological Survey* (*Kathiawad*), pp. 94—134; *Indian Antiquary*, vol. v., pp. 257—275.

received and the scratches caused by his wielding the battle-axe, the arrow, the poniard, the elephant spike, the cestus, the scimitar, the javelin, the club, the iron dart, the dagger, and other weapons; who, mounted on his war-chariot, has no competitor in the world, who from his skill in making verses is called the king of poets; a man who strictly keeps his word, a very god among men."

Very significant is the contrast between the audacious grandiloquence of this record, and the noble modesty and serenity of the older inscription on the same pillar, in which the truly great emperor Asoka, abstaining altogether from vaunts of his power and dignity, enjoins on his subjects the humane treatment of animals, and the duties of benevolence, morality, temperance, and universal toleration.

The Guptas were followed by the Valabhi kings, who also ruled in Kathiawar. No lapidary inscriptions of this dynasty are known, but some of their copper grants, which go by the name of the 'Gujarat plates,' have been discovered. The date is Samvat 380, probably corresponding to 323 A.D. The alphabet of these plates,[1] which is given in line 5 of the Table on p. 336, is a somewhat developed form of the alphabet of the Sah dynasty which preceded the Valabhi kings in this

[1] See Prinsep's *Essays*, vol. ii., p. 40, and plate 38, line 4. The Valabhi alphabet is erroneously called 'Dzirnar' in one of Faulmann's books, and 'Gudzarat' in the other. It is nearly the same as the alphabets Nos. 28 and 29 in Mr. Burgess' plate.

region, but is in some respects more archaic than the alphabet of the earlier Gupta inscriptions. This, however, may only prove that alphabetic development was more retarded in a remote region like Gujarat than in the valley of the Ganges, where a higher civilization prevailed.

The earliest historical dynasty of the Deccan is that of the Chalukyas, which was established towards the end of the 6th century, It was preceded by a dynasty of Vengi kings, conjecturally assigned to the 4th or 5th century, who used an alphabet nearly identical with that of the later cave inscriptions. The earliest Chalukya inscriptions are dated in the years 578 and 634 A.D. The alphabet is a slightly developed form of that of the Valabhi dynasty given in line 5 of the Table. This may be compared with the later Chalukya alphabet dated in 945 A.D., which is given in line 6. It frequently goes by the name of the Kistna alphabet, having been obtained from inscriptions found at Amaravati, a town on the Kistna river to the west of Nagpur, in the province of Berar.[1] It is remarkable not only for its singular symmetry and elegance, but as exhibiting forms which are transitional between the inscriptions of the Gupta and Valabhi dynasties, and the Dravidian alphabets of Southern India.[2] It may

[1] It was first published in the *Journal of the Asiatic Society of Bengal*, vol. vi., plates x. and xi.

[2] The letters *n*, *t*, *y*, *r*, *l*, *kh*, *th*, *dh*, *bh*, are nearly identical with the older Carnatic forms.

be regarded as the source of the Canarese and Telugu alphabets.

The 'Nerbudda' alphabet, given in line 7 of the Table, is probably of similar date. It is derived from a set of copper-plate grants found at Seoni in the Saugor and Nerbudda territories.[1] The letters, though somewhat fanciful and artificial, are most ingeniously and beautifully constructed, and are valuable as constituting another link between the Nagari alphabets of Northern India on the one hand, and the Dravidian alphabets of the South on the other. More especially they help to explain the origin and gradual development of the finials, which are so characteristic of Indian alphabets. This will be seen by comparing the forms of one or two letters. Almost any of them would serve, but we may take *n* and *p* as fair examples of the process. We have :—

	Asoka.	Gupta.	Kutila.	Devanagari.	Nerbudda.	Kistna.	Telugu.	Tamil.
n	⊥	ন	ন	न	ন	ন	ನ	ந்
p	৮	ପ	ପ	प	ପ	ପ	ప	ப்

It will be observed that the Asoka, a lapidary character, has no finials. In the Gupta, when the letters begin with a vertical line, a small cross stroke indicates the commencement of the letter. This probably arose from a slight thickening of the line where the pen was

[1] See *Journal of the Asiatic Society of Bengal*, 1836, vol. v., p. 726. See also the type Table given by Mr. Thomas in Prinsep's *Essays*, vol. ii., which is repeated in Professor Monier Williams' *Sanskrit Grammar*, 2nd ed.

first applied to the paper. In the Kutila this developes into a short horizontal bar, which, in the Devanagari, becomes a continuous horizontal line, connecting the letters. In the Nerbudda it becomes a small oblong; in the Kistna a bifoil; in the Telugu a fork, frequently detached, and formed by a separate movement; and in the Tamil it is developed into a small circle, wholly detached from the letter. Originating in the convenience of the scribe, it subsequently served to show where the letter began, and ultimately became meaningless, both in the northern and southern alphabetic regions. It may be paralleled by the thick and thin strokes of our Roman capitals, which, as in the familiar cases of W, M, K, or Y, now only serve to show the direction taken by the pens of mediæval scribes in forming their characters.

The celebrated 'Kutila' inscription is of great importance in Indian epigraphy, not only from its precise date, but from its offering a definite early form of the standard Indian alphabet, the Devanagari. This inscription was found on a stone dug up at Illahabas, a village in the Bareli district, fifteen miles from Visalapur. It belonged to a temple built by a petty local raja. The inscription informs us that the writer, an artist from Kanauj, was "a proficient in the Kutila character." The date is the Samvat year 1049, answering to 992 A.D.[1] The alphabet is a connecting link between the

[1] See Prinsep's *Essays*, vol. i., p. 322, plate xxxviii., line 7. Cf. vol. ii., p. 53, line 6.

modern Devanagari and the Gauri or old Bengali character, used in the same region about a century later, from which the modern Bengali is descended.

The alphabet given in line 8 is from an inscription found in Assam, which may probably be assigned to the 9th century.[1] This inscription is of great palæographic significance, as it establishes the existence of an ancient cursive alphabet, which helps to explain the origin of various isolated alphabets found in remote regions, such as the Eastern Malay alphabets, the alphabets of Sind and Multan, as well as the cursive scripts of Assam, Pegu, and Siam.

The Assam and Kutila inscriptions may be taken as the early forms of the cursive and literary alphabets of Northern India. It will hereafter be shown that across the whole breadth of India two alphabetic types are superimposed—one was a cursive script, early forms of which may be seen in the Assam and Vatteluttu inscriptions; the other being a literary alphabet, represented in the north by the Devanagari, in the south by the Grantha, and in the east by the Pali. It has often been assumed that the more cursive Indian scripts are only degraded forms of the Nagari and the Pali alphabets: it would, however, rather appear that

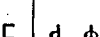
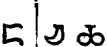
[1] In the Assamese inscription the finials at the top of the letters are not much more developed than in the Gupta alphabet, but we may observe increasing indications of the tendency to form the letters with a vertical stroke to the right, which is characteristic of the Devanagari and Bengali alphabets.

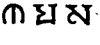
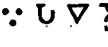
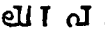
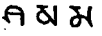
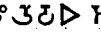
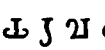
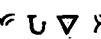
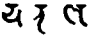
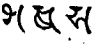
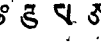
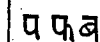
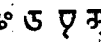
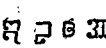
the popular scripts represent an older writing, on which a literary calligraphic style has been superimposed.

The following Tables[1] exhibit the chief alphabets of the Indian group. The Vernacular Alphabets, arranged geographically, come last. They are preceded by a Table of the older alphabets, arranged chronologically, as follows :—

1. The Maurya alphabet from the inscription of Asoka at Girnar.
2. The Andhra alphabet of the Western Caves. It is nearly identical with that of the Mathura inscriptions.
3. The alphabet of the Sah or Kshatrapa inscription at Girnar.
4. The Gupta alphabet from the pillar at Allahabad.
5. The Valabhi alphabet from the Gujarat plates.
6. The Chalukya or Kistna alphabet from the Amaravati plates.
7. The Nerbudda alphabet from the Seoni plates.
8. The alphabet of the Assam inscription.
9. The Kutila alphabet from Bareli.
10. The Kiousa or lapidary Pali.
11. The alphabet of Tibet.
12. The Passepa.
13. The Devanagari.

[1] The successive stages in the evolution of the Indian alphabets can be conveniently represented with approximate accuracy by means of the excellent types cut at the Imperial Printing Office at Vienna for the purpose of illustrating Indian Epigraphy. For the use of these, and many other types, I have to thank Prof. Friedrich Müller and Hofrath Ritter von Beck, the Director of that unrivalled establishment. These alphabets are only intended to be typical: for the more minute local distinctions the reader may be referred to the lithographed Table of thirty-two Indian alphabets from 250 B.C. to 800 A.D. given in Burgess' *Archæological Survey*, or to the very useful collection of 198 Indian alphabets, ancient and modern, compiled by Holle, *Tabel van oud en nieuw Indische Alphabetten* (Batavia, 1882). The student of Indian alphabets will find in this little book the most complete and convenient collection of materials that has yet appeared.

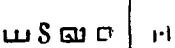
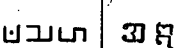
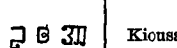
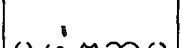
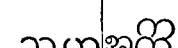
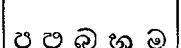
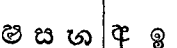
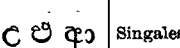
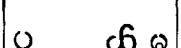
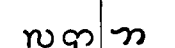
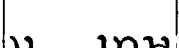
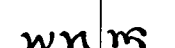
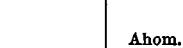
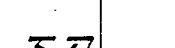
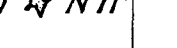
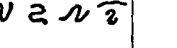
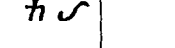
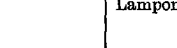
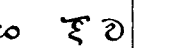
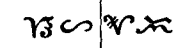
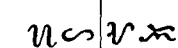
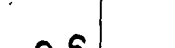
	Gutturals.	Palatals.	Cerebrals.	Dentals.
	k kh g gh ṅ	*ch chh j jh ñ*	*ṭ ṭh ḍ ḍh ṇ*	*t th d dh n*
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13	क ख ग घ ङ	च छ ज झ ञ	ट ठ ड ढ ण	त थ द ध न

Labials.	Semivowels.	Sibilants.	Vowels.	
p ph b bh m	*y r l v*	*ṣ sh s h*	*a i u e ā*	
				Asoka.
				Cave.
				Sah.
				Gupta.
				Valabhi.
				Chalukya.
				Nerbudda.
				Assam.
				Kutila.
				Kiqusa.
				Tibet.
				Passepa.
प फ ब भ म	य र ल व	श ष स ह	अ इ उ ए आ	Nagari.

	Gutturals.	Palatals.	Cerebrals.	Dentals.
	k kh g gh ṅ	*ch chh j jh ñ*	*ṭ ṭh ḍ ḍh ṇ*	*t th d dh n*
8	క ఖ గ ఘ ఙ	చ ఛ జ ఝ ఞ	ట ఠ డ ఢ ణ	త థ ద ధ న
9	ಕ ಖ ಗ ಘ ಙ	ಚ ಛ ಜ ಝ ಞ	ಟ ಠ ಡ ಢ ಣ	ತ ಥ ದ ಧ ನ
14	ક ખ ગ ઘ ઙ	ચ છ જ ઝ ઞ	ટ ઠ ડ ઢ ણ	ત થ દ ધ ન
15	ক খ গ ঘ ঙ	চ ছ জ ঝ ঞ	ট ঠ ড ঢ ণ	ত থ দ ধ ন
16	ক খ গ ঘ ঙ	চ ছ জ ঝ ঞ	ট ঠ ড ঢ ণ	ত থ দ ধ ন
17	ଜ ଖ ଗ ଘ ଙ	ଚ ଛ ଜ ଝ ଞ	ଟ ଠ ଡ ଢ ଣ	ତ ଥ ଦ ଧ ନ
18	ક ખ ગ ઘ	ચ છ જ ઝ	ટ ઠ ડ ઢ ણ	ત થ દ ધ ન
19	ತ ಫ ಗ ಘ	ಠ ಛ ಜ ಝ ಞ	ಟ ಠ ಡ ಢ ಣ	ತ ಥ ದ ಧ ನ
20	ತ ಫ ಗ	ಠ ಛ ಜ	ಟ ಡ ಣ	ತ ಥ ದ ಧ ನ
21	క ఖ గ ఘ ఙ	చ ఛ జ ఝ ఞ	ట ఠ డ ఢ ణ	త థ ద ధ న
22	ಕ ಖ ಗ ಘ ಙ	ಚ ಛ ಜ ಝ ಞ	ಟ ಠ ಡ ಢ ಣ	ತ ಥ ದ ಧ ನ
23	ಕ ಖ ಗ ಘ ಙ	ಚ ಛ ಜ ಝ ಞ	ಟ ಠ ಡ ಢ ಣ	ತ ಥ ದ ಧ ನ
24	ಕ್ ಗ್	ಚ್ ಞ್	ಟ್ ಣ್	ತ್ ನ್

Labials.	Semivowels.	Sibilants.	Vowels.	
p ph b bh m	*y r l v*	*ṣ sh s h*	*a i u e ā*	
ପ ଫ ବ ଭ ମ	ଯ ର ଲ ୱ	ଶ ଷ ସ ହ	ଅ ଇ ଉ ଏ ଆ	Assam.
ପ ଫ ବ ଭ ମ	ଯ ର ଲ ୱ	ଶ ଷ ସ ହ	ଅ ଇ ଉ ଏ ଆ	Kutila.
ਪ ਫ ਬ ਭ ਮ	ਯ ਰ ਲ ਵ	ਸ ਹ	ਅ ਇ ਉ ਏ ਆ	Gurumukhi.
प फ ब भ म	य र ल व	श ष स ह	अ इ उ ए आ	Nagari.
প ফ ব ভ ম	য র ল ব	শ ষ স হ	অ ই উ এ আ	Bengali.
ପ ଫ ବ ଭ ମ	ଯ ର ଲ ୱ	ଶ ଷ ସ ହ	ଅ ଇ ଉ ଏ ଆ	Orissa.
પ ફ બ ભ મ	ય ર લ વ	શ ષ સ હ	અ ઇ ઉ એ આ	Gujarati.
ڀ ڦ ب ڀ م	ي ر ل و	ڻ ھ	ا ڻ ڏ	Sindi.
ਪ ਫ ਬ ਭ ਮ	ਯ ਰ ਲ ਵ	ਸ ਹ	ਅ ਇ ਉ ਏ ਆ	Multani.
ప ఫ బ భ మ	య ర ల వ	శ ష స హ	అ ఇ ఉ ఎ ఆ	Telugu.
ಪ ಫ ಬ ಭ ಮ	ಯ ರ ಲ ವ	ಶ ಷ ಸ ಹ	ಅ ಇ ಉ ಎ ಆ	Canarese.
പ ഫ ബ ഭ മ	യ ര ല വ	ശ ഷ സ ഹ	അ ഇ ഉ എ ആ	Grantha. (Tulu.)
ப் ம்	ய் ர் ல் வ்		அ இ உ எ ஆ	Tamil.

	Gutturals.					Palatals.					Cerebrals.					Dentals.				
	k	*kh*	*g*	*gh*	*ṅ*	*ch*	*chh*	*j*	*ih*	*ñ*	*ṭ*	*ṭh*	*ḍ*	*ḍh*	*ṇ*	*t*	*th*	*d*	*dh*	*n*
10																				
25																				
26																				
27																				
28																				
29																				
30																				
31																				
32																				
33																				
34																				
35																				
36																				
37																				

Labials.	Semivowels.	Sibilants.	Vowels.	
p ph b bh m	*y r l v*	*ṣ sh s h*	*a i u e ā*	
				Kiousa.
				Burmese.
				Square Pali.
				Singalese.
				Pegu.
				Ahom.
				Battak. (Old.)
				Battak. (New.)
				Rejang.
				Lampong.
				Tagala.
				Bisaya.
				Macassar.
				Bugi.

§ 6. THE VERNACULAR ALPHABETS.

The inscriptions which have been discussed in the last section prove that as early as the 10th century A.D. the leading alphabetic types of India had already been evolved.

The chief vernacular alphabets of the Indian family are given in the preceding Tables. It will be seen that they constitute four well marked groups—the Pali, the Nagari, the Dravidian, and the Malay—occupying distinct geographical regions. The Nagari alphabets prevail in the north of India, and the Dravidian in the south; while the Pali type is confined to Ceylon and the regions beyond the Ganges, and the Malay to the islands of the Asiatic archipelago.

It will be observed that this classification of alphabets is essentially coincident with the great lines of linguistic and ethnologic demarcation:[1] the Pali alphabets being used for the isolating tongues of Burma, Siam, and Pegu; the Nagari for the inflectional Aryan speech; while the agglutinative languages of the Dravidian and Malay races are expressed by ancient alphabetic types, distinct but not unrelated.

The Pali Alphabets.

It is more than a mere accident that the Pali script,

[1] See Cust, *The Modern Languages of the East Indies;* and Sayce *Science of Language*, vol. ii., pp. 46 to 49.

which represents the old Indian alphabet of Asoka in the line of most direct descent, should now prevail only in lands beyond the confines of ancient India. The Hindus had a curious repugnance to the art of writing; oral transmission of the Vedic hymns was considered imperative; and even so late as the 8th century A.D., as Max Müller has pointed out, Kumarila mentions writing only to condemn its use, and can only conceive the Veda as existing in the minds of men. It was quite otherwise with the founders of the Buddhist faith. Buddhism, a missionary religion rather than an ancestral cultus, eagerly availed itself of the art of writing for the propagation of its doctrines. Hence the primitive monuments of the Indian alphabet are mostly due to Buddhist princes, and high among the claims which this creed has upon the gratitude of posterity is the part it played in the diffusion of alphabetic writing over India, Eastern Asia, and the islands of the China Sea. Trampled out and expelled from the land of its origin, Buddhism achieved its greatest triumphs among alien races, to whom Sanskrit and the Prakrits were unfamiliar tongues. The Buddhist scriptures were preserved in Ceylon and the lands beyond the Ganges, and the ancient alphabet in which they are written became the parent of alphabets which prevail in these regions.

Hence the description of the vernacular alphabets of the Indian family naturally commences with non-Indian scripts, used to express the sounds of isolating lan-

guages strange to Indian ears, since it is these foreign alphabets which, by a curious chance, exhibit the most archaic existing types of the ancient Indian letters.

The old Pali language and alphabet, which conserve the Buddhist scriptures, are no longer anywhere vernacular. Pali was one of the Prakrit dialects of India, derived from Sanskrit by attrition, and bearing to it much the same relation that Italian bears to Latin. Further decay was arrested on its becoming a dead language, reserved for ecclesiastical use. Pali was probably the vernacular of the kingdom of Magadha[1] (Behar), the cradle of Buddhism, and hence it naturally became the sacred language of the new faith, just as the dialect of Mohammed's tribe, the Koreysh of Mecca, became the classical Arabic of the Koran.

The Buddhist tradition asserts that at the time of the persecution of their faith they took the Pali language and alphabet with them to Ceylon, whence, probably about the end of the 4th century A.D. or the beginning of the 5th, they crossed over to Aracan and the neighbouring lands.

Even among the Trans-Gangetic nations the Pali alphabets are not universal. The Annamese possess a script which has been adapted from the Chinese phonograms; alphabets of the Malay family are used

[1] The question is not free from difficulty. See Sayce, *Science of Language*, vol. ii., p. 75. Westergaard and Kuhn consider Pali to represent the dialect of Malava in the 3rd century B.C.

in the Philippines; while other regions—Burma, Siam, Pegu, and Cambodia—employ the Pali alphabet in conjunction with another character apparently of somewhat different origin.

There are three Burmese scripts, very dissimilar in appearance, but essentially identical. The alphabet given as no. 10 in the Table on p. 340 is called the *Kyouk-tsa* (Kiousa), or 'stone writing.' It is a lapidary character, known only from ancient inscriptions, the oldest of which is from a ruined pagoda at Bangkok. Hence the forms of the letters are, as in other lapidary alphabets, angular, linear, and monumental—presenting a great contrast with the 'square,' or standard Pali (no. 26, p. 340), used in the sacred books of the Buddhists, which being painted in, with Indian ink, by means of a brush, is characterized by thick strokes and rounded angles. The ordinary Burmese character (no. 25), called *tsa-lonh*, or 'round writing,' is scratched with a point on palm-leaves. It is symmetrical and elegant, the letters being formed, as in all palm-leaf scripts, of circles, or portions of circles in combination, straight horizontal lines being inadmissible, as they would cause the leaf to split. The three Burmese alphabets form an instructive illustration of the differences necessarily arising from the nature of the writing materials employed.

The three forms of the Pali alphabet which are found in Burma appear to have supplanted a primitive alphabet of a different type, which seems to have prevailed

throughout the Trans-Gangetic regions. The ancient alphabet of Burma was probably identical, or nearly so, with the Ahom alphabet[1] (given in line 29) still used in Assam, which is closely related to the Pegu or Mon alphabet (line 28), whose former prevalence is evidenced by the nature of the cursive scripts of the neighbouring lands.

The old Pali, as exhibited in the Kiousa character of Burma, and the Kawi inscriptions of Java, seems to have been derived from a very ancient type of the western alphabet of India; whereas the Trans-Gangetic script, which survives in the Ahom and Pegu alphabets, and in the cursive Siamese, belongs to a less primitive type of the Indian alphabet, which prevailed in eastern India, and is exhibited in the Assam inscription.[2]

The Siamese use the square Pali for their sacred books, but have an elegant cursive character for ordinary

[1] Ahom is a dialectic Pali form of the name of the country called Assam in the Sanskrit languages. The modern vernacular script of Assam may therefore be conveniently designated as the 'Ahom' alphabet, the name 'Assam' being reserved for the ancient alphabet of this region, which is given in line 8, p. 336, from the Assam inscription.

[2] An examination of the Kiousa letters in line 10 on p. 336 shows that for the forms of *g*, *y*, and especially of *d*, we must go back to the cave characters, several, such as *kh*, *ph*, and *n*, being of the Gupta or Valabhi type, while others, such as *k*, *ch*, *ṭ*, *ṇ*, *a*, and *u*, may most easily be explained by reference to the later eastern type shown in the Assam inscription.

use. Its formation can be explained by the aid of two ancient Siamese MSS. now at Paris. One of these, the Patimokkha MS., exhibits forms clearly akin to those of the Assam inscription. The Boromat MS. is somewhat similar, but more fanciful and angular in style.[1]

The Laos, a Siamese race, have also two alphabets, the ecclesiastical and the secular; and the same is the case with the Cambodians.[2] All these scripts seem to be related to the Khomen alphabet of the Boromat MS., and confirm the conclusion that an ancient cursive alphabet prevailed in these regions prior to the introduction of the Square Pali.

The affinities of the curious Leptsha or Rong alphabet,[3] used by the inhabitants of Sikim, have not been precisely determined, but it belongs apparently to the Ahom group.

The complicated Javanese letters, which at first sight seem to be hopelessly unintelligible, resolve themselves, on examination, into an alphabet of the Pali type.[4] The old Kawi, on which the modern Javanese

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[1] The alphabets are given in plate v. of Burnouf and Lassen's *Essai sur le Pali*, and are repeated by Faulmann, *Buch der Schrift*, p. 149.

[2] An excellent Table of the Laos and Cambodian alphabets accompanies Dr. Bastian's important paper, *Remarks on the Indo-Chinese Alphabets*, in *J. R. A. S.*, N. S., vol. iii., 1868.

[3] Given by Faulmann, *Buch der Schrift*, p. 135.

[4] See Holle, *Tabel*, p. 7, and plates 6, 7, 16.

is based, is known from copper-plate grants of the 9th and 10th centuries, facsimiles of which are given in Cohen-Stuart's *Kawi Oorkonden*.[1] The alphabet of these inscriptions is a legible Pali of the same general type as the Burmese Kiousa alphabet. This ancient Kawi alphabet of Java is there called the Akchara Buddha, or 'Alphabet of Buddha,' a name which proclaims its introduction by the Buddhist missionaries. The modern Javanese has additional letters derived from an earlier alphabet, belonging to the type exhibited in the Assam inscription, to which the Malay and the cursive Siamese also belong.

The Singalese, like the Javanese, is an isolated alphabet of the Pali class, modified however by early Grantha influences. It is confined to the southern half of Ceylon, the northern region being occupied by the intrusive Tamil alphabet and language.

The alphabet of Corea,[2] which was formerly supposed to have been developed from Chinese, through the medium of the Japanese syllabaries, is really a primitive form of the Indian alphabet, introduced doubtless by Buddhist teachers. The alphabetic arrangement decisively establishes its Indian origin, while the forms of several of the letters prove that it was derived from an ancient Pali or Tibetan type.

A still more startling proof of the wide reaching activity of the early Buddhist missionaries has recently

[1] See also Burnouf and Lassen, *Essai sur le Pali*, plate v.

[2] This alphabet will be found in Faulmann, *Buch der Schrift*, p. 64.

come to light.[1] An ancient MS. has lately been brought from Japan, from which M. de Rosny concludes that prior to the development of the Japanese syllabary from the Chinese the Japanese possessed an ancient alphabet, ultimately of Indian origin, but probably introduced from Corea.[2]

The Nagari Alphabets.

The most important group of Indian alphabets is the Nagari,[3] or, as it is usually called, the Devanagari.[4]

[1] See *Academy*, June 18, 1881.

[2] Mr. Satow has shown that the art of printing with moveable types was practised in Corea at the beginning of the 14th century, before it was known in Europe. See *Athenæum*, March 18, 1882.

[3] The meaning of the term Nagari has been much disputed. It has been conjectured that it was originally the local alphabet of Benares, and has been explained as the 'city alphabet,' from *nagara*, 'a city.' Dr. Burnell is inclined to believe that it was the *naga-lipi* or 'serpent writing' (Cf. vol. i., pp. 286, 318; and Burnell, *S. Indian Pal.*, p. 52). It was thus understood and translated at the time when the ancient Tibetan version of the *Lalita Vistara* was made. A third hypothesis explains it as the writing of the Nagara Brahmans of Gujarat, and a fourth as that of the Sah kings, who were called the nagas, or 'snakes.'

[4] The term Devanagari, which would mean the divine or sacred Nagari, is not used by the natives of India, and seems to have been invented by some ingenious Anglo-Indian about the end of the last century. It has, however, established itself in works on Indian Palæography, and may be conveniently retained to denote that particular type of the Nagari character employed in printed books for the sacred Sanskrit literature, while the generic term Nagari may serve as the designation of the whole class of vernacular alphabets of which the Devanagari is the literary type.

Their range is almost conterminous with the Bombay and Calcutta Presidencies. They are employed in the Central Provinces, the Punjab, Kashmir, Rajputana, Gujarat, the North-West Provinces, Oudh, the Mahratta country, Behar, Bengal, and Orissa. The Tibetan alphabets also belong essentially to this group.

The Devanagari is the most important of Indian alphabets, not only from its great geographical extension, but because it is the chief character in which the Sanskrit literature is conserved. It is the sacred alphabet of the Brahmans, just as Pali is that of the Buddhists. It is sometimes loosely called 'Sanskrit,' a term which correctly applies to the language only, and not to the script. The distinction should be carefully observed, Sanskrit being one of the oldest of known languages, while its vehicle, the Devanagari, is of comparatively modern origin.

In comparing the Devanagari letters with those of other Indian alphabets it is often necessary to leave out of consideration the two rigid lines which, as a rule, form the contour of the Devanagari letters. In the Kutila, and other still earlier prototypes, the germs of the horizontal line which connects the letters may be detected. This ligature arose, as has been already shown, out of a slight thickening of the stroke which marked the commencement of each letter, and may be compared to the foot and head lines seen in most of our modern Roman capitals, such as H, I, or K. In the classical Devanagari script this horizontal line

assumes great regularity, and connects all the letters; in Eastern alphabets belonging to the Nagari family, such as the Bengali, it is less uniform; and in the western group, of which the Gujarati is the type, it is entirely absent. The vertical line forms part of the letter, and is sometimes radical, as in *a* and *n*, but is often merely calligraphic, or due to assimilation, in which case it is usually absent from the corresponding Bengali, Gurumukhi, and Gujarati letters. Hence these more cursive alphabets are useful in determining what portions of the Devanagari characters are radical, and what are merely due to a desire for symmetry.

The alphabets of the Nagari group may now be briefly catalogued. (See Table, p. 338.)

The Gurumukhi character used by the Sikhs is transitional between the Gujarati and the classical Devanagari.

In Kashmir two alphabets are employed, the Sarada and the Thakuri, one nearly identical with the Devanagari, and the other inclining to the Gurumukhi type.

The Mahratta conquest of the northern portion of the Deccan extended the southern limit of the Nagari alphabets, intruding a linguistic and alphabetic wedge into the Dravidian territory. Mahratti is written in two characters;—that used for books is called Balbodh, or 'intelligible to a child,' and is nearly the same as the Devanagari; the other, called Modi, is a cursive script of the Gurumukhi type.

The Bengali is the most important of the eastern alphabets of the Nagari family. Its prototype is to be sought in old Gauri inscriptions, which date from the 10th century.

The Uriya, or Orissa, belongs to the same class, but has many archaic forms, explained by the characters of the Assam inscription. The peculiar aspect is to be ascribed to the practice of writing on palm-leaves with an iron stile.

In Nepal four scripts are used—the Nevari, which is nearly the same as the Devanagari, the Banjin-Mola belonging to the Bengali type, while the Kaiti-Nagari and the Ranja are of intermediate character, the former approximating to the Nevari, and the latter to the Banjin-Mola.

The Sindi and Multani alphabets are very curious and interesting. Several characters, such as *n*, *p*, *b*, *bh*, and *r*, have evidently been borrowed from the contiguous Gurumukhi or Gujarati alphabets, but in other cases we find letters, such as *j*, *th*, *n*, which seem to be isolated survivals from the old cursive alphabet of northern India. This was afterwards overlaid and supplanted throughout extensive regions by the Devanagari, the literary alphabet of the Brahmans. This hypothesis disposes of sundry theories which have been founded on the resemblances between the Sindi alphabet on the one hand and the Siamese and Malay alphabets on the other. Beyond the Ganges the primitive alphabets were overlaid by the clas-

sical Pali, and in Hindustan by the classical Devanagari, just as the Roman and Greek cursives were overlaid by the calligraphic book-hands.

The Tibetan alphabets constitute a sub-family of the Nagari, which branched off at a very early period. Three alphabets are used in Tibet. The ecclesiatical script is called the Utshen or Dvoujam (no. 11). It retains faithfully the primitive forms, which are said to have been cut on wooden blocks for printing in the 7th century, soon after the Indian alphabet was introduced by the Buddhists into Tibet. The Umin is a cursive script used for secular purposes, while the Khyugagi is still more cursive. The Utshen preserves a very early type of the northern alphabet of India, as appears from the fact that for the prototypes of several letters, such as *chh*, *j*, and *l*, we have to go back to the inscriptions of the Gupta dynasty.

The internal evidence supplied by the Tibetan shows that an early Indian alphabet was first simplified by the omission of several letters, and afterwards expanded by differentiation, a phenomenon observed also in the Mongolian and Runic alphabets. Thus the cerebrals *ṇ*, *ṭ*, and *ṭh*, are not the Indian cerebrals, but have been obtained by inverting the dentals *n*, *t*, *th*, while ꡊ, *z*, a sound unknown in Sanskrit, is an inversion of the Gupta letter ꡅ *j*.

The Kchab or Passepa alphabet (no. 12) was derived from the Tibetan. It is said to have been invented by the Grand Lama Bachspa (Pa-sse-pa) in 1259 A.D.,

during the reign of Kublai Khan.[1] Five of the letters, added to the Mongol Galik alphabet, are still used by the Kalmuks on the lower Volga.

The Dravidian Alphabets.

The History of the Alphabets of Southern India has been investigated with such success by Dr. Burnell, that it will be unnecessary to do more than briefly to summarize the results at which he has arrived, and for the details to refer the student to his book.[2]

Dr. Burnell shows that the Dravidian alphabets of Southern India were derived from the character of the western caves. As early as the 4th century A.D. this gave birth to separate types, the first of which, represented by the inscriptions of the Vengi and Chalukya dynasties who ruled in the Deccan, was the source of the Telugu and Canarese alphabets; while from the other, represented by the Cera inscriptions, proceeded the great Tamil alphabet on the one hand, and on the other the group which comprises the Tulu, the Malayalim and the Grantha.

The alphabet of the 10th century Chalukya inscrip-

[1] See Burnouf and Lassen, *Essai sur le Pali*, plate v.; Abel-Remusat, *Recherches sur les langues Tartares;* and Poole, *Cat. of Oriental Coins in B. M.*, vol. vi. This alphabet is embroidered on an ancient pall in the Lamasary of Yung-Ho-Kung in Pekin. A facsimile is given by Mr. Thomas in the *Numismata Orientalia*, p. 49.

[2] Burnell, *Elements of South-Indian Palæography*, second edition, 1878.

tion from Amaravati, given in line 6, p. 336, represents the type from which both the Telugu and the Canarese alphabets were derived. The Telugu, with its graceful curves, is a beautiful specimen of a palm-leaf character. Its elegant symmetry, and the ingenious denotation of the aspirated letters by means of a subscript dash, are worthy of note.

The Canarese alphabet prevails on the plateau of Mysore, in the western districts of the Nizam territory, and to a small extent in the Canara district on the Malabar coast.

The Telugu language is spoken by 14 millions of people, who occupy the basins of the Kistna and Godavari, the eastern coast from Madras northwards to the Godavari, and extend inland to the boundary of the Mahratta country.

These two alphabets, the Telugu to the east, and and the Canarese to the west, occupy the northern portion of the Madras Presidency. A reference to the Table on p. 338 will show their essential identity. In the latter, a few variants have been derived from an old form of the Grantha alphabet with which it is conterminous.

The southern Dravidian types may be traced back to the Cera inscription of 467 A.D. From this lapidary alphabet two scripts were developed, a cursive and a literary script. The first is represented by the Tamil, while the other has developed into the Grantha or 'book" alphabet used by the Tamil Brahmans for the

Sanskrit transcriptions of their sacred books. From it are derived two vernacular alphabets which are used on the Malabar coast; one is the Tulu Grantha (line 23), and the other the Malayalim, from which several characters were borrowed by the Christians of St. Thomas in order to supplement the Syriac (Karshuni) alphabet which they obtained from the Nestorian missionaries (see vol. i., p. 293.)

The great Tamil alphabet occupies the extreme south of India. From a point somewhat north of Madras it extends along the eastern coast beyond Cape Comorin, it prevails throughout the plain of the Carnatic, and extends over the northern portion of Ceylon, dividing the island nearly equally with the Singalese, an isolated alphabet of the Pali type. The Tamil script presents one of the most curious problems in the history of the Indian alphabets. Most of the letters are descended, like those of the other Dravidian alphabets, from the character of the western caves, but several letters have been shown by Dr. Burnell to be derived from the nearly extinct Vatteluttu, or "round hand," an independent alphabet known to us from inscriptions of the 7th century A.D. The Vatteluttu is apparently the survival of a very ancient cursive alphabet of unknown origin. It may have been derived from the primitive alphabet of India at a time prior to the redaction exhibited in the inscriptions of Asoka, or possibly it may have been an independent branch of the Semitic alphabet, intro-

duced into Southern India by early Phœnician traders. Dr. Burnell doubts whether the Maurya alphabet of the 3rd century B.C., which was the parent of every other Indian alphabet, can have been the source of those of the Tamil characters which were derived from the Vatteluttu.

Another curious problem is offered by the scripts used in the Maldives, a group of almost innumerable coral islands, politically dependent on Ceylon, from which they are distant some 500 miles.

There are two Maledevi alphabets, the old and the

THE MALEDEVI ALPHABETS.

Old.	New.	Values.	Old.	New.	Values.	Old.	New.	Values.
		h			*k*			*t*
		th			*a*			*l*
		ṅ			*w*			*g*
		r			*m*			*n*
		b			*ph*			*s*
		ḷ			*dh*			*ḍ*

new, which are plainly unrelated, and not, as is usual in such cases, successive deformations of the same script. The more ancient, called the Dewehi Hakura, is written like other Indian alphabets, from left to right. It is still in use in the Southern Atolls, though

extinct, or nearly so, in the Northern Islands.[1] It is only a degraded type derived from the Dravidian alphabets of the mainland, as appears from the resemblance of several letters, such as *r*, *b*, *n*, *a*, *ph*, *l*, to the corresponding Canarese characters; and of others, such as *h*, *ṅ*, *ḷ*, *k*, *t*, *g*, to the Tulu.[2]

The more recent alphabet, which prevails chiefly in the Northern Atolls, is said to have been introduced when the Maldives were reconquered by the Mohammedans from the Portuguese. It is called the Gabali Tana, and is written, like the Neskhi alphabets, from right to left. It is plainly, however, neither an Arabic nor an Indian alphabet. Of the eighteen letters of which it consists, the first nine, as Prinsep acutely suggested, are merely the Gobar or Arabic ciphers, with phonetic values assigned to them. The other nine letters, which have not hitherto been explained, seem to be the old Telugu-Canarese numerals[3] used in like manner as substitutes for letters. It may be conjectured that the Mohammedan invaders, finding the forms of the vernacular letters unfamiliar, numbered them, using the numerals instead. If this explanation be correct, the Gabali Tana is unique among alphabets in its method of formation, the nearest analogue being the Irish Oghams, or the ciphers used in signal codes and cryptographic messages.

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[1] See Cust, *Languages of East Indies*, p. 64.

[2] See lines 22, 23, p. 338, and Burnell, *S. Indian Pal.*, pl. xvi.

[3] See Burnell, *S. Indian Pal.*, pl. xxiii.

The Malay Alphabets.

The modern alphabet of Java, which is also used in Borneo,[1] is proved by the old Kawi inscriptions to belong to the Pali class.[2] The Malay alphabets, which extend over the other islands of the Asiatic archipelago, are of more doubtful origin.

The principal alphabets used by the Malayan races are the Battak in central Sumatra, the Rejang and the Lampong in south-eastern Sumatra, the Bugi and the Macassar in Celebes, the Tagala and the Bisaya in the Philippines.[3]

These alphabets appear to have been derived from at least two distinct sources. Holle has shown reasons for supposing that the alphabets of Sumatra are only degraded types of the old Kawi.[4] The Eastern Malay alphabets have a different history. Their prototype seems to be the Eastern cursive alphabet, which is represented by the Vengi and Chalukya[5]

[1] See Holle, *Tabel*, no. 141.

[2] See Holle, *Tabel*, p. 7, and Alphabets, nos. 38 to 75. Two inscriptions from East Java are of the Nagari type. See Holle, *Tabel*, nos. 49, 50 compared with nos. 12 and 16.

[3] See p. 340, nos. 29 to 37; and Cust, *Languages of the East Indies*, pp. 131–143.

[4] Holle, *Tabel*, p. 8.

[5] Holle gives the alphabets of two inscriptions from West Java (nos. 80 and 81) which are almost identical with no. 179, which is Burnell's Chalukya alphabet of 578 A.D. Cf. the Vengi and Cera inscriptions, nos. 143 and 147 in Holle.

inscriptions in the South and by the Assam inscription in the North.[1] Thus in the Tagala, which may be taken as the type of the Eastern Malay alphabets, we have the following correspondencies.[2] The resemblance between the Assam and Tagala forms is singularly close.

	g	*k*	*ng*	*t*	*m*	*h*	*u*
Kistna,							
Assam,							
Tagala,							

The Tagala alphabet must have been obtained from the Eastern Coast of Bengal at some time prior to the 8th century A.D. That it was conveyed by mariners who ventured on distant voyages is indicated by the fact that the oldest forms of the Malay letters are found in the islands which are most remote from the Indian shores. A glance at the Table on p. 340 will

[1] Dr. Friedrich Müller, in his tract *Ueber die Schrift der malayischen Völker* (Transactions of the Anthropological Society of Vienna, 1870), derives the Malay alphabets directly from the alphabet of Asoka, at a period prior to the Christian era. The comparison between the Assam and Tagala letters made in the text renders Dr. Müller's theory extremely improbable. That a precisely parallel development of the forms of so many letters should have taken place independently is contrary to all experience and analogy. Any comparison between the Asoka and the abraded and almost formless Battak and Bugi letters, which are plainly degraded types, is of little worth. If the Asoka and Tagala alphabets are compared, the resemblances become inconspicuous.

[2] These correspondencies are better seen in the more elaborate Vengi and Chalukya alphabets given by Burnell and Holle.

show that the Tagala, which occupies the region most remote from India, is the prototype from which the alphabets of Celebes and Macassar have been derived.

It may be a matter of surprise that the number of these Malay alphabets, of which only the leading types are represented in the Table, should be so great. This can, however, be easily explained. In barbarous and isolated communities the growth of innumerable dialects is a matter of course. In the Polynesian archipelago neighbouring islands speak different dialects, and possess different animals and plants. In Melanesia every small island has its own language. It is the same with the alphabets. With high civilization and extended means of communication a uniform alphabetic type may prevail over wide areas, whereas among insular races with a low type of culture a variety of degraded scripts are certain to arise. Thus the more civilized people of Manilla and Macassar have preserved a primitive type of the Malay alphabet, which has degenerated into a variety of almost formless scripts among the ruder tribes of Celebes and the Moluccas. A similar fate overtook the great Punic alphabet in Numidia and Spain. Very striking is the general similarity of the Bugi alphabet, the most remote and degenerate form of the Indian script, with the degraded alphabet of the Spanish coins (vol. i., pp. 227, 230), the moribund type in which the great Phœnician alphabet expired in the extreme west.

CHAPTER XI.

THE EPILOGUE.

It is only within the last few years that the discovery of immense stores of Palæographic material has made possible a history of the Alphabet. Without the evidence afforded by the Papyrus Prisse, the Moabite stone, the Baal Lebanon vessels, the Assyrian dockets, the Himyaritic inscriptions, the records from Safa, the papyri from Egyptian tombs, the epitaphs from Thera, the graffiti from Abu Simbel, the abecedaria from Etruria, the Pompeian tablets, the coins of Bactria and the Satrapies, the Persepolitan monuments, the Runic torques and broaches, and the Edicts of Asoka, all of which have been brought to light within the present century, any attempted determination of the relations and affiliations of the great alphabetic families would necessarily be little more than guess work. How great has been the advance may be seen by a reference to the works of Kopp, the founder of scientific Palæography, which were published little more than fifty years ago. In numberless cases his conjectures have been replaced by certainties.

But the advantages enjoyed by the modern palæographic student do not consist only in the priceless epigraphic treasures which now fill the Museums of Europe. It is owing chiefly to the discovery and application of modern principles and methods that Epigraphy and Palæography can claim to be ranked among the exact Sciences. The analogies supplied by the comparative method of research make it possible to obtain that grasp of general principles which serves as the safest guide in the investigation of details.

Of these principles the most important is the doctrine of Evolution. The scientific revolution, of which Darwin has been the great apostle, is rapidly extending itself to all departments of human knowledge. Discarding the obsolete notion of arbitrary invention or creation, we seek for self-acting causes adequate to produce the results which are detected by minute research. We ask, not only what a thing is, but how it came to be what it is. And we find that the greatest changes have been effected by the accumulation of variations in themselves almost imperceptible. The great Law of Continuity, first formulated in the axiom of Leibnitz, *natura non facit saltum*, holds good in every science. Slow differentiation by minute variations, as Geiger well observes, proves historically to have been the method by which the transformations of alphabets, as well as of languages, of animals, of plants, and even of the surface of the globe itself, has been effected. More than twenty years ago Ritschl laid

down the law that Scientific Palæography rests on the assumption that no alphabetical changes are ever accidental or arbitrary, as was formerly assumed, but are the result of evolution taking place in accordance with fixed laws.

It is not difficult to determine the nature of these general laws which govern the evolution of alphabets. A script, like the speech of which it is the vehicle, is the expression of human character. Both of them, there is reason to believe, arose at first out of very simple beginnings—language from almost inarticulate cries, writing from rude pictures, at first barely phonetic. Both are in a state of continuous mutation. Both are subject to continual processes of development, deformation, and regeneration. The object, in either case, is the communication of ideas with the greatest attainable ease and certainty. The law of least effort brings about the attrition and degradation of the forms of words as well as of letters. Thus they become gradually less and less intelligible, the object for which they exist is defeated, till at last the law of efficiency comes into play, and regeneration ensues by means of minute differentiation, and by the survival of the fittest forms, and the disappearance of the less fit.

Another important principle is the law of correlated variation. Any change, however brought about, tends to produce other changes. Just as the introduction of a new animal or plant into an island or a continent disturbs the balance of nature, either causing the extermi-

nation of species unable to cope with it in the struggle for existence, or bringing about modifications in their habits or structure to fit them for the new conditions, so we find that a change in any one letter constantly produces related changes in other letters—they have to be differentiated in order to maintain an adequate dissemblance.

Of an opposite tendency is the principle of assimilation, which often produces curious superficial resemblances among letters belonging to the same alphabet, affecting, more especially, contiguous letters such as *m* and *n*, *p* and *q*, E and F.

This assimilation is no doubt partly caused by the love of symmetry and the tendency to unconscious imitation, but it is due, to no small extent, to the nature of the writing materials used. Just as *habitat* affects wholly different animals in the same way, giving in the arctic regions a white coat to the fox as well as to the hare, and stripes both to the zebra and the tiger, so a script will be influenced by the fact of the material employed being costly or abundant, facile or difficult to use. Stone, wood, metal, clay, wax, palm-leaves, bark, parchment, papyrus, paper, give a special character to any script for which they are habitually used. So also it is possible to recognize certain unmistakeable characteristics which are consequent on the graphic implement employed, whether it be the chisel, the brush, the reed, the stile, or the quill. Scripts of such different pedigree as lapidary Greek and Himyaritic, or Orissa

and Singalese, or Arabic and Uigur, may become curiously assimilated in general appearance, and even in the outline of individual letters, owing to the use of the same material. Thus a lapidary script tends to become square and angular, it eschews irregular forms, the letters are of nearly uniform size, and destitute of oval loops or sweeping tails. A xylographic script, such as the runic writing, is also rectilinear, but prefers triangles to squares, complicated forms disappear, it becomes elongated and narrow, it avoids curves and horizontal lines, and adopts in place of them diagonals running obliquely across the grain of the wood. A palm-leaf script, on the other hand, prefers arcs of circles and vertical lines, lending itself readily to intricate convolutions, but rigorously eschews straight horizontal lines, which would cause the leaf to split. On metal we get scratches and intersecting lines, the angles are not joined with precision, and circles tend to become ovals. On clay the strokes are separated, loops are opened, and intersecting lines, which on metal are so common, are as a rule avoided. Books written on parchment, a costly material, exhibit an elaborate calligraphic style, the letters being upright, separately formed, regular in size, with symmetrical curves, and elliptical rather than circular arcs being preferred. The up-strokes are fine, and the down-strokes of uniform thickness. It is easy to see that our capitals O B D on the one hand, or W M K on the other, have arisen out of a parchment script. But if papyrus, a

cheap and rough material, is ordinarily used, the writing tends to become careless and cursive, easily degenerating into an almost illegible scrawl, the letters being joined by ligatures, and exhibiting blotted loops and elongated tails, without the fine up-strokes which distinguish a parchment script. The qualities of paper are intermediate between those of parchment and papyrus, and hence a paper script may be either cursive or calligraphic.

Again, the character of the writing and the forms of the letters are influenced by the quality of the ink, and still more by the nature of the pen, whether brush, or reed, or quill, or stile. It is impossible to mistake the cause of the broad blobs and dashes which characterize a script formed with a brush and thick glutinous ink, such as the square Pali, the Siamese, the Chinese, or the Hieratic of the Papyrus Prisse. The employment of a brush causes the writing to be upright, broad, and horizontally extended. If a reed be used the writing usually slopes to the left, while with a quill it slopes to the right. It is possible to trace the influence on English handwriting of the substitution of steel pens for quills, and also the effects of the stylographic pens now coming into use.

As in Geology the great solutions of continuity in the succession of forms may be traced to changes of climate, or to alterations in the distribution of land and water, so the greater alphabetic changes—which concern not the mere outward form of the letters, but the

nature, the value, and the number of the symbols—are usually consequent on the transmission of a script from one nation to another, and its consequent adaptation as the vehicle of a different form of speech. Each language being governed by its proper phonetic laws, the transmitted script has to conform itself to their requirements. A language may be rude or cultivated, it may either have a simple phonology like the Finnic or the Peguese, which do not possess more than a dozen consonants, or it may have a delicate gradation of sounds like the Sanskrit, which requires no less than thirty-three consonants and fourteen vowels for its adequate expression. Some languages are especially rich in sibilants, others in gutturals, or nasals, or dentals, or liquids, or vowels. Hence either more or fewer symbols of a particular class are required. Some of the letters of a transmitted script will usually be found to be superfluous; consequently they will either disappear altogether, or be appropriated as the symbols of approximate sounds. The additional symbols which will generally be required are never deliberately invented, but are either borrowed from some contiguous or competing alphabet as in the case of Lycian and Coptic, or are evolved by differentiation of forms as in Greek and Latin, or are denoted by tags as in Ethiopic and Mongolian, or by diacritical points as in Arabic and Bohemian, or by hooks and bars as in the Indian scripts, or they may arise out of ligatured letters as in the Slavonic and Albanian alphabets. The arbitrary invention of new

symbols, which in the pre-scientific stage of Palæography was constantly called in requisition as the ready explanation of every difficult or anomalous form, proves to be the one method historically unknown.

Just as climate or rainfall may accelerate or retard the rapidity of geological change, so the rate of alphabetic variation will differ under different external conditions. A language widely diffused, a common literature, an aggressive creed, an active commerce, an extended empire,—these are causes which exert a conservative influence, as is seen in the case of the alphabets of Athens, Mecca, Rome, or London. Or, as in the case of the Samaritan and Coptic alphabets, similar results may be produced by such an opposite cause as the religious or political isolation of small communities, just as the fauna of large continents as well as of oceanic islands tends towards stability. On the other hand, the competition of independent communities, destitute of a common literature, favours the multiplication of new forms, as is seen in the case of the early alphabets of Greece prior to the Persian war, or of the national alphabets of mediæval Europe before the rise of the Carolingian Empire; while, on the other hand, national and ecclesiastical unity reacts on local peculiarities, and causes the ultimate disappearance of local alphabets as well as of local dialects.

The transmission of alphabets has been largely affected by trade-routes, conquest, colonization, and religion. The effect of commercial intercourse on the

diffusion of alphabets is seen in the transmission of the Phœnician alphabet to Hellas, of the Sabean to India, and of the Greek to the Scandinavian races. Similar results have been brought about by colonies planted among barbarous tribes by more civilized races, as in the case of the Carthaginian colonies in Spain, or the Greek colonies in Italy. The influence of conquest is usually more transient, as is shown by the speedy disappearance of the scripts which followed in the wake of the Macedonian conquests in Bactria and Persia, or those of the Achæmenian kings in India, or of the Mongolian Khans in Central and Eastern Asia. But when the conquerors introduce a new religion, as was the case when the Khalifs overran the East, permanent changes may be effected. Of great potency are ecclesiastical influences of every kind, especially those exerted by aggressive missionary religions. The rapid spread of the Nestorian script among the Tartaric and Mongolian hordes, the extension of the Buddhist alphabet to Ceylon and Burma, to Java and Tibet, the propagation of the alphabet of Mecca over such vast regions in Africa and Asia, the transmission of the Greek alphabet to the Slaves, or of the Irish alphabet to England and Germany, and in more recent times of the Latin alphabet to so many remote and semi-savage tribes, furnish striking examples of the power exerted by the Religion of a Book in promoting the wide diffusion of local alphabetic types.

Again, the circumstance that alphabetic transmissions have frequently taken place during obscure epochs of history, may supply valuable evidence as to commercial intercourse, transmitted culture, and ethnical relations. Thus the affiliation of the runes throws unexpected light on the intercourse between the Greek colonies on the Euxine and the northern lands, and shows the importance of the great Olbian trade-route by the water-way of the Dneiper, which is otherwise known only by a chance notice in Herodotus. The Oghams serve to establish the fact of primitive Teutonic settlements, probably Jutish, in South Wales, and possibly in Ireland, as to which the chroniclers are silent; from the peculiarities which distinguish the early alphabets of Italy we learn the ancient predominence of Chalcis, and the extent of her colonies and her commerce; the nature and distribution of the primitive alphabets of Greece supply evidence unattainable from direct historical sources as to Phœnician colonization in the Ægean, while the transmissions to India of the alphabets of Iran and of Yemen are facts of no small significance.

The transmission of a script implies, in turn, the diffusion of other forms of culture. Thus the Greek type which characterizes the East German house is explained by the Greek origin of the Gothic runes, while the adoption, in different parts of Greece, of the two metric standards in use among the Semitic races of Western Asia must be taken in connection with the

twofold character exhibited by the names and forms of the Greek letters of the earliest epoch.

Again, starting from the axiom that alphabetic development is slow, gradual, and progressive, it is plain that the style of the letters on coins and inscriptions of personages otherwise unknown to history may furnish important chronological data, and may bring what would otherwise be mere legend within the domain of exact knowledge. Examples are supplied by the coins of the Arsacidan, Bactrian, and Indo-Scythian kings, of the Nabathean and Numidian princes, or of the chiefs who ruled in Gaul and Britain prior to the Western extension of the dominion of Rome. Facts not without importance relating to the date and extent of Phœnician influence in Greece, or to the early intercourse between India and the western world, may be obtained from a consideration of the period required for the evolution of the peculiarities of the transmitted alphabets.

It must, however, be remembered that in the scientific investigation of the affiliation of alphabets, chronological and geographical considerations are of primary importance. It is labour thrown away to compare, as used formerly to be done, alphabets belonging to different or undetermined epochs. A surprising dissimilarity may easily and rapidly arise in the forms of the letters. No one ignorant of the historical connection between the modern cursive German script and the Latin, or between the Arabic and the square Hebrew, would

imagine it possible that they could be closely related scripts. Mere resemblances or dissemblances may therefore easily prove misleading. In attempting any such comparisons it must be shown that the supposed parent script was actually prior to that which it is proposed to derive from it. Hence extreme attention must be paid to any indications of date contained in the inscriptions or manuscripts with which we deal.

The geographical limitations of the problem demand no less caution. It is futile to attempt to affiliate the alphabets of races not in geographical contact, or enjoying commercial intercourse. The path by which an alphabet may have travelled, and the precise period at which this can have occurred, must be distinctly shown.

With such limitations, it is evident, from the foregoing considerations, not only that Epigraphy and Palæography may claim, no less than Philology or Biology, to be ranked among the Inductive Sciences, but that they are able, in their turn, if studied on scientific principles, to throw no inconsiderable light on other departments of knowledge, and to elucidate numerous obscure problems in the early history of mankind.

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BY THE SAME AUTHOR.

WORDS AND PLACES: Etymological Illustrations of History, Ethnology, and Geography. London, 1864.

ETRUSCAN RESEARCHES. London, 1874.

THE ETRUSCAN LANGUAGE. London, 1876.

GREEKS AND GOTHS: A Study on the Runes. London, 1879.

UEBER den URSPRUNG des GLAGOLITISCHEN ALPHABETS. Berlin, 1880.

00065224

Digitized with financial assistance from the
Government of Maharashtra
on 05 October, 2018